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Medical cannabis in the United States: Policy, politics and science

Jelica Grbic
Edith Cowan University

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Medical Cannabis in the United States: Policy, Politics and Science

Jelica Grbic, BSc (Hons)

Thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy (Public Health)

Principal Supervisor: Dr. David Ryder

Associate Supervisor: Prof. Perilou Goddard

Faculty of Health, Engineering and Science

School of Exercise and Health Sciences

EDITH COWAN UNIVERSITY

December 2014

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Abstract

Historically, cannabis has been used as a pharmaceutical drug for a variety of conditions including rheumatism, depression, convulsions, and malaria. Since the 1970s, randomised, controlled clinical trials have shown cannabis to be effective in the treatment of debilitating medical conditions including nausea and vomiting resulting from cancer chemotherapy, wasting syndrome associated with HIV/AIDS, and chronic pain. Despite scientific evidence, as of 2011, when the material for this thesis was collected, only 17 states of the United States (U.S.) and the District of Columbia had enacted medical cannabis laws allowing patients with specific medical conditions to use cannabis without being criminally prosecuted. This thesis examines two components of the medical cannabis policy: the medical cannabis policy process in five representative states of the U.S., and the factors influencing the formation of such a process. The first part of the thesis chronologically documents the passing, attempts to pass, and failure to pass medical cannabis policies in five U.S. states; two with a current medical cannabis law; one where attempts to pass a law have been made, but a law has not yet been passed; and two states where no or few attempts at passing a medical cannabis law have been made. The second part of the thesis used a questionnaire to elicit the factors influencing policies as perceived by three groups. Group one comprised individuals directly involved in the medical cannabis policy process in at least one of the five states referred to above and group two comprised individuals participating in research in the alcohol and other drug field. Group four comprised members of the International Society for the Study of Drug Policy (ISSDP). The study found that, despite the expectation that the same rules would apply to cannabis as other medicine, the medical cannabis process appears to be less medically and more politically driven, with

scientific evidence having limited influence. The results suggest that there are a number of interlinking factors which played a role in the passing or failure to pass medical cannabis laws in U.S. states, and the level of influence of these factors can vary according to context or conditions placed on them. Three major themes emerged in relation to the factors influencing policy: the role of scientific evidence, the political process, and the interaction between factors. It is hoped that this thesis will be viewed as an observation of the medical cannabis process, not only from the researcher's point of view but from the views of those who participated in the process, researched the process, or observed the changes in medical cannabis laws over the years.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) contain any material previously published or written by another person except where due reference is made in the text; or
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Some sections of this thesis have already been presented as a conference paper:

Grbic, J., Ryder, D., & Goddard, P. (2010, March). *Factors influencing medical cannabis policy development in the U.S. and their implications*. Paper presented at the International Society for the Study of Drug Policy Conference, Santa Monica, CA.

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Table of Contents

ABSTRACT	III
DECLARATION	V
ACKNOWLEDGEMENTS	VII
LIST OF ABBREVIATIONS	
CHAPTER 1- INTRODUCTION	1
PARTICIPANTS IN THE UNITED STATES POLICY MAKING	2
THE ROLE OF THE SCIENTIFIC EVIDENCE.....	3
<i>Barriers to research utilisation.....</i>	<i>5</i>
<i>Improving the use of scientific evidence.</i>	<i>6</i>
POLICY TRANSFER AND LEARNING	7
HISTORY OF MEDICAL CANNABIS IN THE UNITED STATES	11
<i>The FDA approval process.....</i>	<i>19</i>
<i>First medical cannabis IND program.....</i>	<i>21</i>
<i>Medical cannabis since 2010.</i>	<i>29</i>
CHAPTER 2- THE UNITED STATES POLITICAL SYSTEM	35
THE U.S. CONSTITUTION.....	35
FEDERAL GOVERNMENT	36
<i>Executive branch.....</i>	<i>36</i>
<i>Federal Legislative branch.</i>	<i>37</i>
House of Representatives.	37
Senate.....	38
How a bill becomes law	38
<i>Judicial branch.</i>	<i>39</i>
STATE GOVERNMENT	40

<i>Executive branch.</i>	41
<i>Legislative branch.</i>	42
<i>Judicial branch.</i>	42
LOCAL GOVERNMENT.....	43
DIRECT LEGISLATION	44
INFORMAL STRUCTURES	49
<i>Interest groups.</i>	49
<i>Political parties and the party system.</i>	51
<i>Independent research organisations.</i>	53
<i>The media.</i>	53
MEDICAL CANNABIS AND THE FEDERAL-STATE RELATIONS	54
SUMMARY	56
CHAPTER 3- CANNABIS AS A MEDICINE: A REVIEW OF THE LITERATURE.....	57
SYNTHETIC CANNABINOIDS	58
ROUTE OF ADMINISTRATION	59
<i>Smoking.</i>	59
<i>Vaporisation.</i>	60
<i>Eating/drinking.</i>	60
<i>Capsules.</i>	61
<i>Suppositories.</i>	61
<i>Spray.</i>	62
<i>Topical.</i>	62
<i>Intravenous.</i>	63
REVIEW STRATEGY	63
<i>Inclusion criteria.</i>	64
<i>Level of evidence.</i>	65
REVIEW SUMMARY.....	65

PAIN	66
RELIEF OF NAUSEA AND VOMITING	82
SPASTICITY	89
APPETITE STIMULATION/WEIGHT GAIN	96
OTHER CONDITIONS	100
<i>Sleep</i>	108
SYSTEMATIC REVIEWS AND META-ANALYSES.....	109
REPORTS.....	113
ADVERSE EFFECTS OF CANNABIS USE.....	119
DISCUSSION.....	122
CHAPTER 4- MEDICAL CANNABIS IN FIVE REPRESENTATIVE STATES.....	128
MICHIGAN	129
<i>2008 Michigan Medical Marijuana Act: Chronological account</i>	133
Changes at the city level.	137
<i>Increase in medical cannabis debate</i>	139
Proposal 1.	141
Funding.	147
Post-Proposal 1.	148
NEW MEXICO	151
<i>2007 Lynn and Erin Compassionate Use Act: Chronological account</i>	157
ILLINOIS	181
<i>New attempts</i>	193
<i>Changes at the city level</i>	200
KENTUCKY	202
<i>Student action</i>	206
<i>Religious stance</i>	208
<i>Debates</i>	209

<i>Follow-up.</i>	210
LOUISIANA	211
<i>A city-level attempt.</i>	217
<i>Arrests draw attention to the issue.</i>	218
DISCUSSION	221
<i>The role of scientific evidence</i>	233
“Cherry-picking”: the selective use of evidence.....	234
<i>Public opinion.</i>	235
<i>Local governments.</i>	236
<i>The people as legislators: Influence of direct democracy.</i>	237
<i>Organised interest groups.</i>	239
<i>Allocation of money.</i>	240
<i>Politicians and political parties.</i>	241
<i>High-profile politicians.</i>	242
<i>Decoupling.</i>	243
<i>Use of anecdotal evidence and personal experience.</i>	244
<i>Media.</i>	245
CHAPTER 5- GROUP ONE AND GROUP TWO STUDY	250
SAMPLE.....	250
PROCEDURE	252
<i>Data collection methods.</i>	252
<i>Questionnaire design.</i>	253
Group Two.	255
<i>Questionnaire administration.</i>	255
Group Two.	256
ANALYSIS.....	257
RESULTS	258

<i>Opinions on medical cannabis laws.</i>	259
<i>Factors influencing medical cannabis legislation.</i>	262
<i>The role of scientific evidence.</i>	266
<i>Mixed and inconclusive research evidence.</i>	269
<i>Need for a change in federal cannabis laws.</i>	270
<i>How the scientific evidence is used.</i>	271
<i>Decoupling.</i>	272
<i>The influence of politicians.</i>	275
<i>Influences on politicians' decision making.</i>	276
<i>The people as legislators: Influence of direct democracy.</i>	278
<i>The influence of national-level advocacy organisations on state-level policy.</i>	281
<i>Higher level opposition: The federal government.</i>	284
<i>The effectiveness and organisation of state-based organised groups.</i>	287
<i>The perceived presence of state-based organised groups.</i>	289
<i>The role of money.</i>	290
<i>How money is used.</i>	291
<i>City and county-level change.</i>	292
<i>Difference between states.</i>	294
<i>Need for activity.</i>	295
<i>Media influence.</i>	296
<i>The importance of knowledge/education.</i>	297
<i>The influence of old laws.</i>	298
<i>The role of patient testimonies.</i>	299
<i>The opposition of the law enforcement lobby.</i>	300
<i>Public opinion and support.</i>	300
<i>Religious organisations.</i>	301
GROUP THREE	301
DISCUSSION	303

STUDY LIMITATIONS	309
CHAPTER 6- GROUP FOUR STUDY	313
SAMPLE.....	313
PROCEDURE	314
Interview questions.....	315
The interview process.	316
ANALYSIS.....	319
RESULTS	320
<i>Moderate but increasing role of scientific evidence.</i>	320
Scientific evidence: a range of roles.....	321
Scientific evidence and agenda setting	322
Factors influencing the role of scientific evidence.	323
Improving the use of scientific evidence in policy making	324
Science and democracy.....	327
Scientific evidence in the future: an increasing importance.	328
<i>Selective use of scientific evidence.</i>	328
<i>Scientific evidence and medical cannabis.</i>	329
Factors influencing the use of science in medical cannabis policy.....	331
Improving the use of scientific evidence in medical cannabis policy.	333
Selective use of medical cannabis research.	335
<i>Is cannabis a medicine?</i>	336
<i>Differences between medical cannabis and other areas of policy.</i>	337
<i>Framing the issue.</i>	339
<i>Science vs. politics.</i>	340
<i>Interest: who stands to win or lose?</i>	340
<i>The influence of public opinion.</i>	342
<i>Ballot initiative vs. legislature.</i>	343
<i>Factors politicians have to take into account. As discussed in the earlier chapters,</i>	345

<i>State differences.</i>	346
<i>Anecdotal evidence and testimonials.</i>	347
<i>Politics and policy.</i>	348
<i>The role of advocates.</i>	349
The importance of what is advocated.	351
<i>Perceptions, morals, and ideology.</i>	352
<i>The role of organised networks.</i>	353
DISCUSSION	354
STUDY LIMITATIONS	360
CHAPTER 7- DISCUSSION	363
CONCLUSION	377
REFERENCES	380
APPENDIX A- QUESTIONNAIRE FOR GROUP ONE	441
APPENDIX B- ADDITIONAL QUESTIONS FOR GROUP TWO	450
APPENDIX C- INFORMATIONAL EMAIL	452
APPENDIX D- INFORMATION LETTER	456
APPENDIX E- GROUP FOUR INTERVIEW QUESTIONS	460

List of Abbreviations

ACP	American College of Physicians
AMA	American Medical Association
BNDD	Bureau of Narcotics and Dangerous Drugs
CAN	Cannabis Action Network
CBD	Cannabidiol
CBM	Cannabis-based medicine
CGIS	Clinical Global Impression Scale
CPMK	Citizens Protecting Michigan's Kids
CSA	Controlled Substances Act
D	Democrat
DCCC	Detroit Coalition for Compassionate Care
DEA	Drug Enforcement Administration
DPA	Drug Policy Alliance
ECU	Edith Cowan University
FDA	Food and Drug Administration
Gov.	Governor
IDOH	Illinois Department of Health
IND	Investigational New Drug
IOM	Institute of Medicine

ISSDP	International Society for the Study of Drug Policy
LPTRP	Lynn Pierson Therapeutic Research Program
LSU	Louisiana State University
MCCC	Michigan Coalition for Compassionate Care
MDCH	Michigan Department of Community Health
MPP	Marijuana Policy Project
MRP	Medical and Recreational Peace
MS	Multiple Sclerosis
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIDA	National Institute on Drug Abuse
NIH	National Institutes of Health
NMDH	New Mexico Department of Health
NORML	National Organization for the Reform of Marijuana Laws
ONDCP	Office of National Drug Control Policy
PCP	Prochlorperazine
R	Republican
SAMHSA	Substance Abuse and Mental Health Service Administration
THC	Delta-9-Tetrahydrocannabinol
UK	University of Kentucky
U.S.	United States

Chapter 1- Introduction

Studying the origins, development, and implementation of policies allows us to enhance knowledge of the policy process and examine factors influencing policy creation and implementation, as well as the effects of policy (Birkland, 2005; Sabatier, 1991; Weible, Heikkila, deLeon, & Sabatier, 2012). If the process by which policies are enacted is not analysed, important changes and improvements cannot be made (Burch, 1999). Anderson (2003) defined policy as “a relatively stable, purposive course of action followed by an actor or a set of actors in dealing with a problem or a matter of concern” (p.2). This definition of policy will be adopted in this thesis. Policies may take various forms such as legislation, executive orders, or others official acts (Anderson, 2003).

The policy process is complex and inherently political and does not have one single theoretical foundation (Birkland, 2005; Choi et al., 2005; Ritter, 2011). A number of theories of the policy process offer insight into the process including “Institutional Analysis and Developmental Framework”, “Multiple Streams”, “Advocacy Coalition Framework”, “Policy Diffusion”, “Punctuated- Equilibrium”, and “Social Construction and Policy Design” (Nowlin, 2011). Because the policy process is complex and multifaceted, Weible et al. (2012) argued that a single framework cannot explain all its facets and it is difficult to reach consensus on which is the “best” or most satisfactory approach (Anderson, 2003). To enable the reader to understand the process for the development of medical cannabis policies, this thesis will adopt the approach of the Institute of Medicine (IOM) (1999) study which looked at medical cannabis by describing what happened with no predetermined framework identified. By taking this approach, this thesis will provide an account of the medical cannabis policymaking

process, analyse the evidence and arguments offered in support of the major claims made for and against the medical use of cannabis, capture what happened in the states with medical cannabis laws, and describe and analyse the process of development of medical cannabis policies.

Participants in the United States Policy Making

Birkland (2005) outlined two categories of participants in policy making; official and unofficial actors. Official actors are involved in public policy and given responsibilities in laws or in the Constitution and therefore have the power to make and enforce policies. Unofficial actors include those who play a role in the policy process but do not have a legal authority. Unofficial actors are involved in the process because they have important interests to protect and promote. Interest groups are very important unofficial actors and the impact that they have depends on how powerful the group is, the control it has over resources, the influence it has on official actors, and access to information. The decisions in the policymaking process are the cumulative result of interactions between the many actors involved in the process (Wolf, 2000). The political process in the U.S. will be discussed in Chapter Two of this thesis.

There is a complex interaction between the actors in the policy process and mixed evidence on what influences policy (Birkland, 2005; Noel, 2010). There are normally several actors involved in the process, involving a number of complex interacting elements over time (Brownson, Chriqui, & Stamatakis, 2009; Choi et al., 2005; Sabatier, 1999). The policy process can also be long and occur at different levels of government (Sabatier, 1999). Public policies do not just happen through one isolated event but are the result of actions or patterns of action taken over time by the actors

involved (Anderson, 2003). One element in the mix of influences on the policy process is scientific evidence, which is discussed next.

The Role of the Scientific Evidence

Evidence-based policy is encouraged in public policy and is occurring in some public sectors (Brownson, Baker, Left, Gillespie, & True, 2011; Davies, Nutley, & Smith, 2000). The key characteristics of evidence-based policy making in public health include making decisions using the best available peer-reviewed evidence, using data and information systems systematically, applying program-planning frameworks, engaging the community in decision making, conducting sound evaluation, and disseminating what is learned (Brownson et al., 2009). Ideally, scientific evidence should always be incorporated in selecting and implementing programs, developing policies, and evaluating progress (Brownson et al., 2011). However, as the policy process is a political rather than scientific process no policy process relies solely on research evidence (Anderson, 2003; Brownson et al., 2009; Brownson et al., 2011; Pentz, Marers, Schinke, & Rohrbach, 2004; Ritter, 2011). Birkland (2005) and Ritter (2011) argued that in order for the study of public policy to be useful to the community as a whole, it is important to bridge the gap between what research tells us and how citizens and government officials use that information.

Weiss offered seven different models of the use of research in policymaking (Weiss, 1977, 1979). These are (1) knowledge-driven; (2) problem-solving; (3) interactive; (4) political; (5) enlightenment; (6) tactical; and (7) intellectual enterprise (Weiss, 1979). Weiss suggested that the “enlightenment model” was the way in which scientific research most frequently enters the policy arena (Weiss, 1979). In the enlightenment model, the impact of research on policy is not direct, but research is

instead seen as one of several sources of information available to policymakers (Weiss, 1977, 1979). Weiss' enlightenment model indicates that research utilisation develops through a gradual shift in thinking and that the accumulation of research will influence policy by educating the policymakers.

Weiss also identified ways in which the results of policy research enter the policy field and influence policy decisions (Weiss, 1991). The three ways described by Weiss are (1) research as data and findings; (2) research as ideas and criticism; and (3) research as arguments or briefs for policy action (Weiss, 1991). The implication of these for policy research is that policymakers have to get something out of research if they are to use it. When research is used as data or findings it is assumed that these meet the users' needs and that there is no conflict between what the goal of research is and what is required by policymakers. Research is likely to be influential when there is consensus on values and goals of research and policy. When research is used as ideas, the findings are generalised and diffused into a simple story, altering the way that issues are conceptualised and problems framed. The ideas from research became absorbed into conventional wisdom and bring new insights into the policy process in terms of what needs to be done and what solutions will achieve the desired outcomes. Research as arguments represents research to which an advocacy position has been added; a decision has already been made and the policymakers and/or interest groups use research to support their position. When research is used as arguments, the data are selectively lost in order to make an argument more persuasive (Weiss, 1991).

Weiss (1991) suggests that research as data is more likely to be influential in situations of consensus on values and goals, when research has been explicitly designed to test a limited number of alternatives and findings are clear-cut, when nobody knows

what the situation is or if the present conditions are unacceptable, and when decision makers using data are skilled in analysing it so that data are not applied beyond their generalisability. Research as ideas is more likely to be influential at the early stages of policy discussion, when existing policy is in crisis and a way out of the situation is needed, when there is uncertainty around what will work and ideas are needed, and in decentralised policy arenas where many separate bodies make a decision. Research as arguments is more likely to be influential when conflict is high and different sides are seeking justification to strengthen their own case, in legislatures where argumentation is the prevailing mode, and after decisions have been made and there is continuing need for legitimisation (Weiss, 1991). In practice, while research can be used for different purposes by policymakers, there are also several barriers to effective use of research in decision making.

Barriers to research utilisation. Weiss listed the reasons for the limited use of research in policymaking as weaknesses in the research itself, conflicting demands on policy, and the discrepancy between what knowledge is needed by policymakers and what is provided by researchers (Weiss, 1977, 1979). More recently, Black (2001) listed these reasons as (a) policymakers having their own goals for policies other than evidence and clinical effectiveness; (b) the dismissal of evidence as irrelevant and not applicable to a particular sector; (c) lack of consensus about evidence and its interpretations; (d) focus on other types of evidence such as personal experience; (e) a social environment not conducive to policy change; and (f) poor quality of knowledge purveyors.

In terms of public health, Brownson et al. (2011) suggested that the potential barriers for use of evidence-based decision making are lack of resources, lack of

leadership and instability in setting a clear and focused agenda for evidence based approaches, lack of incentives for using evidence-based approaches, and lack of a long-term view for program implementation and evaluation. Brownson et al. (2011) also suggested that external (including political) pressures can drive the process away from evidence, as well as inadequate training, lack of time to gather the necessary information and evidence, lack of evidence on the effectiveness of a specific intervention, and lack of information on implementation of interventions. Possible approaches to overcoming these barriers and improving the use of scientific evidence are discussed next.

Improving the use of scientific evidence. To improve the use of scientific evidence by policymakers, it is necessary to consider which arguments are likely to be useful to policymakers (Weiss, 1991). Researchers need to understand the policymaking process and that their research may not be used in the way they intended, as the policymakers consider other factors in deciding policy. In order for research to have an impact, it is necessary to consider the values of the policymakers and the factors other than research evidence which play a role in the policymaking process (Weiss, 1991). Davies et al. (2000) believed it important for there to be some agreement on what counts as evidence in what circumstances, that there should be a strategy of creating evidence in priority areas, that such evidence needs to be disseminated where it is most needed and made available for wide use, and that strategies should be put in place to ensure that evidence is integrated into policy and utilised in practice.

Bacci (2009) suggested that what needs to happen for research evidence to be used effectively in the process is for researchers and decision makers to collaborate more instead of working in isolation, and for the decision makers to be involved in all

stages of research. Decision makers also need to be more transparent about their aims and objectives and clarify what sort of information they want and how they want to use it, while researchers also need to make their expectations clear. Bacci (2009) also suggested that there needs to be more of a synthesis and summary of knowledge rather than a focus on single studies.

In terms of public health, Brownson et al. (2009) argued that to overcome the barriers to the use of evidence, potential solutions such as increasing funding, increasing the understanding of the value of the evidence-based approach and identification of new ways of shaping organisational culture to support evidence-based decision making need to be considered. Brownson et al. (2009) also believed that systematic communication and dissemination strategies need to be implemented as well as wider dissemination of new and established training programs. Other solutions suggested include enhanced skills for efficient analysis and review of literature, increased funding for applied research and dissemination of findings, and greater emphasis on building the evidence base for external validity (Brownson et al., 2009). It has also been recognised that policymakers draw lessons from the actions of their counterparts in other jurisdictions which is referred to as policy transfer and learning. This is discussed next.

Policy Transfer and Learning

The policy transfer process is described as “the process by which knowledge about policies, administrative arrangements, institutions and ideas in one political system (past or present) is used in the development of policies, administrative arrangements, institutions and ideas in another political system” (Dolowitz & Marsh, 2000, p.5). As different jurisdictions are subjected to similar situations, policymakers are increasingly looking to other jurisdictions for knowledge and ideas they can apply to

their own jurisdictions (Dolowitz & Marsh, 2000; Wolf, 2000). According to Wolf (2000) “the most important trend for the future of public administration is the trend towards global learning processes among practitioners and experts” (p. 696).

Wolf (2000) noted that currently there is no such thing as “best country” in terms of public administration, but there are instead good and better practices which need to be identified on the basis of national needs and the requirements for its adaptation to the political and administrative context in which they are to be applied. According to Dolowitz and Marsh (2000), policy transfer can occur at international, national and local levels of governance. Policymakers can also look within their own political systems to find possible policy solutions. In terms of what can be transferred, Dolowitz and Marsh (2000) refer to “policy goals, policy content, policy instruments, policy programs, institutions, ideologies, ideas and attitudes and negative lessons” (p. 12). Peachment (2001) suggested that for each policy consideration the possible courses of action should focus on what the policy must do, what it must not do, and what it could do.

A range of actors is likely to become involved in the policy transfer process, including elected officials, bureaucrats/civil servants, political parties, pressure groups, policy networks, policy entrepreneurs and experts, think tanks, transnational corporations, and supranational governmental and nongovernmental institutions and consultants (Dolowitz & Marsh, 2000; Wolf, 2000). However, policy transfer is not an “all or nothing” process and the type of transfer likely to occur is subject to a number of factors such as the actors involved, the resources and time available, and the nature of the problem faced (Dolowitz & Marsh, 2000). Policy transfer can be direct and indirect and the reasons why it occurs also vary and are affected by a range of factors,

illustrating the dynamic and complex nature of the policy process. Peachment (2001) noted that one of the constraints on policy transfer is that the historical record of policy development is often unclear, with much policy inherited and many statutes being very old and never having been tested in law.

Overall, there appears to be a gap between what research shows as effective and the policies that are enacted and enforced (Birkland, 2005; Brownson, et al., 2009; Davies et al., 2000; Hanney, Gonzalez-Block, Buxton, & Kogan, 2003; Ritter, 2011). Evidence can impact on policymaking, but not necessarily in the immediate or direct way that would be expected by the researchers, as evidence is only one of many factors that affect policymaking (Black, 2001; Brownson et al., 2009). It is also not enough for research to be available as it needs to be research that is wanted and can be used by policymakers. Evidence-based policy is difficult to achieve and policies created do not necessarily reflect evidence (Hanney et al., 2003). Evidence can be used to make evidence-based policy but evidence itself may not necessarily be used by the participants in the process (Birkland, 2005; Brownson et al., 2009; Hanney et al., 2003). The extent of the involvement of researchers in the policy process has also been questioned. Pentz et al. (2004) argued that researchers were reluctant to get involved in the highly political policy process and that the lack of attention paid to evidence reflected historical precedent rather than deliberate inattention. In order for research to have an impact on policy, researchers need to have an understanding of the policy process and the political nature of policymaking and that science is just one of many elements under consideration (Davies et al., 2000; Schenkel, 2010; Pentz et al., 2004; Weiss, 1998).

Overall, it is important to analyse policies in order to obtain a better understanding of how the policy process works, how problems and issues are identified and placed on the political agenda, how and why governments choose to act or not act on policies, and what the effects of the policies are. One policy that has ignited debate in recent years is that of medical cannabis. For the purposes of this thesis, cannabis will be the term applied to all products derived from the plant *Cannabis sativa*, which has over 400 compounds (Institute of Medicine [IOM], 1999; McPartland & Russo, 2001; Ryder, Walker, & Salmon, 2006).

In 1996 California became the first state in the U.S. to legalise the cultivation, possession and use of cannabis for medical purposes (Marijuana Policy Project [MPP], 2013; Zeese 1999). It was the first in a string of state medical cannabis movements in the U.S. Since 1996, despite federal opposition, when the material for this thesis was collected, 17¹ U.S. states and the District of Columbia have enacted medical cannabis laws (MPP, 2013; ProCon.org, 2014). In order to understand what happened in the states that enacted or did not enact medical cannabis laws, it is important to look at the history of drug policy in the U.S., and medical cannabis in particular. The following section will provide a background to the history of medical cannabis in the U.S. and recount the events leading up to the passage of the medical cannabis laws.

¹ Since 2011 when the material for this thesis was collected, , six more states have enacted medical cannabis laws. As of November 2014, 23 states and the District of Columbia have enacted medical cannabis laws.

History of Medical Cannabis in the United States

The U.S. has a complex history of drug control policy, but the restriction of use and distribution of drugs at the federal level goes back approximately 100 years (McBride, Terry-McElrath, Harwood, Inciardi, & Leukefeld, 2009). Previous to 1914, any restrictions on use and distribution of drugs were at the state or local level, and it was thought that federal control over drug use and prescription practices by medical professions was unconstitutional (Musto, 1999). Drugs such as heroin, morphine, and cannabis were readily available and sold as part of medicines. The U.S. history of medical cannabis began with the first American Conference on the Medical Use of Marijuana in Ohio in 1860, where physicians reported its effectiveness in the treatment of conditions including chronic cough, gonorrhoea and pain (Grinspoon, 2000; IOM, 1999; Ruiz, Strain, & Langrod, 2007).

Gradually, federal commerce and tax powers were broadened by Supreme Court decisions and occurred in the context of major social reforms, such as the shift towards safe food and drugs which led to the Pure Food and Drug Act of 1906 and the Harrison Act of 1914 (McBride et al., 2009; Musto, 1999). The Pure Food and Drug Act required that any quantity of cannabis, as well as several other substances, be clearly marked on the label when sold to the public (Musto, 1999). After the passage of the Pure Food and Drug Act in 1906, campaigning for federal anti-drug laws gained momentum.

As cannabis became widely used as a medicine, recreational use of the drug also increased. While cannabis use was mostly supported by the public, in the 1920s the federal government started giving more attention to drug use and there was political pressure for the federal government to regulate cannabis, amongst other drugs (Musto, 1999). The passage of the Harrison Tax Act saw the federal government not only

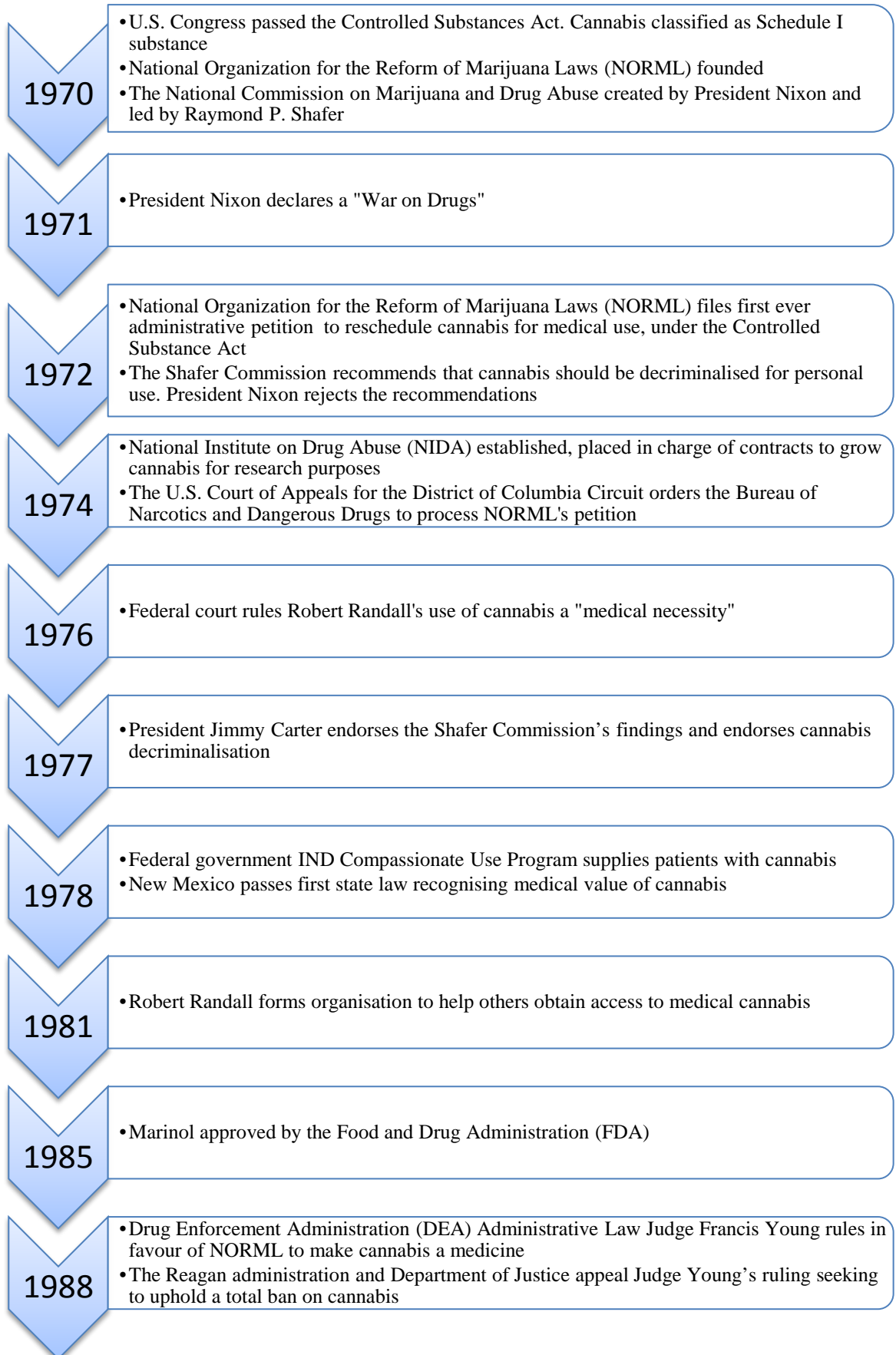
collecting taxes and ensuring registration of drug users, but also the prosecution of doctors that prescribed the drugs. Since it was brought to the U.S. in the 1800s, cannabis was recognised as an effective medicine, and by the 1930s at least two American companies were selling medicines containing cannabis (Grinspoon, 2000; Mack & Joy, 2000; Ruiz et al., 2007). During the 19th and 20th century the drug's recreational use increased and it became popular among minorities, such as immigrants and African-Americans. Fear of cannabis was seen in areas with concentrations of Mexican immigrants, who were feared as a source of crime and deviant social behaviour (Musto, 1999). The end of the 1920s saw the emergence of reports of negative effects of cannabis, including crime and death (Mack & Joy, 2000; Marshall, 2005).

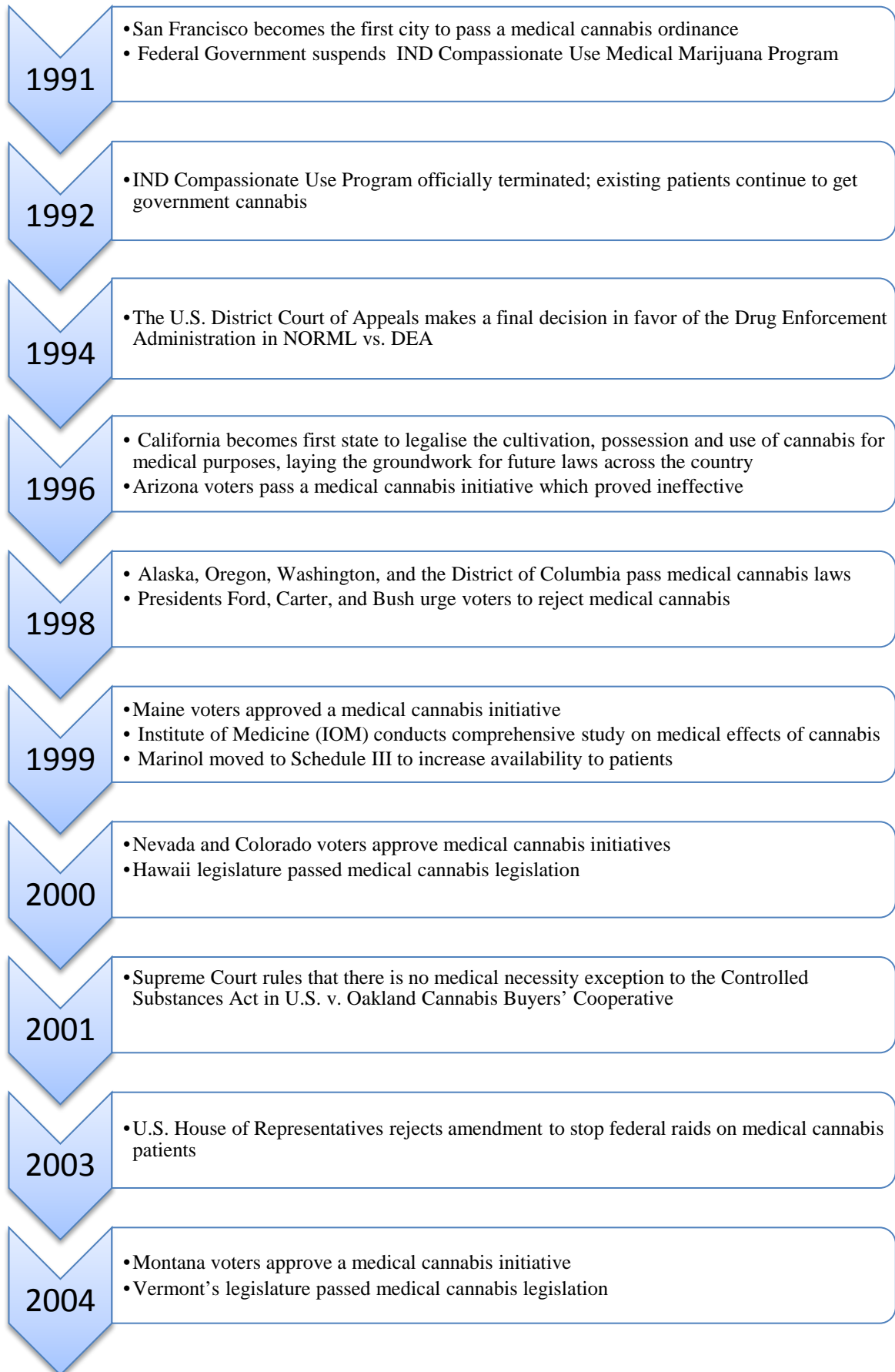
Consequently, the U.S. Congress passed the Marihuana Tax Act of 1937, which imposed a \$1-an-ounce tax for industrial and medicinal use of cannabis and a \$100-an-ounce tax for the drug's recreational use (Eddy, 2010; Koch, 1999). While cannabis was not made illegal by this act, the prohibitive tax imposed on it made it difficult to get cannabis, including for medical purposes (Gieringer, Rosenthal, & Carter, 2008). As a result, the use of cannabis reduced significantly and doctors eventually ceased to prescribe it. By 1942, cannabis was no longer included in the U.S. Pharmacopeia (American College of Physicians [ACP], 2008; Koch, 1999). U.S. states also started passing laws making cannabis illegal and by 1937 cannabis use was prohibited in every state (Gieringer et al., 2008; Musto, 1999).

The use of cannabis increased in the 1960s, which was also a period of economic growth in the U.S. (Musto, 1999). Cannabis also became a political issue, associated with anti-war protests and the use of the drug was no longer associated only with minorities (Musto, 1999). However, cannabis remained legal under federal law

until the Controlled Substances Act (CSA) of 1970 (Controlled Substances Act [CSA], 1970; Eddy, 2010). The act was signed into law by President Nixon, at a time when drug use and its associated harm were increasing (Musto, 1999). The act classified all drugs into schedules, and cannabis was placed in the most restrictive, Schedule I category, together with LSD and heroin. This classification implied that cannabis had no accepted medical use, had a high potential for abuse, and could not be used safely even under medical supervision (CSA, 1970). Figure 1 outlines the history of medical cannabis in the U.S. since the enactment of the CSA.²

² The chronological account in the original thesis ended in 2011; all events from 2011 leading up to 2014 have been subsequently added.





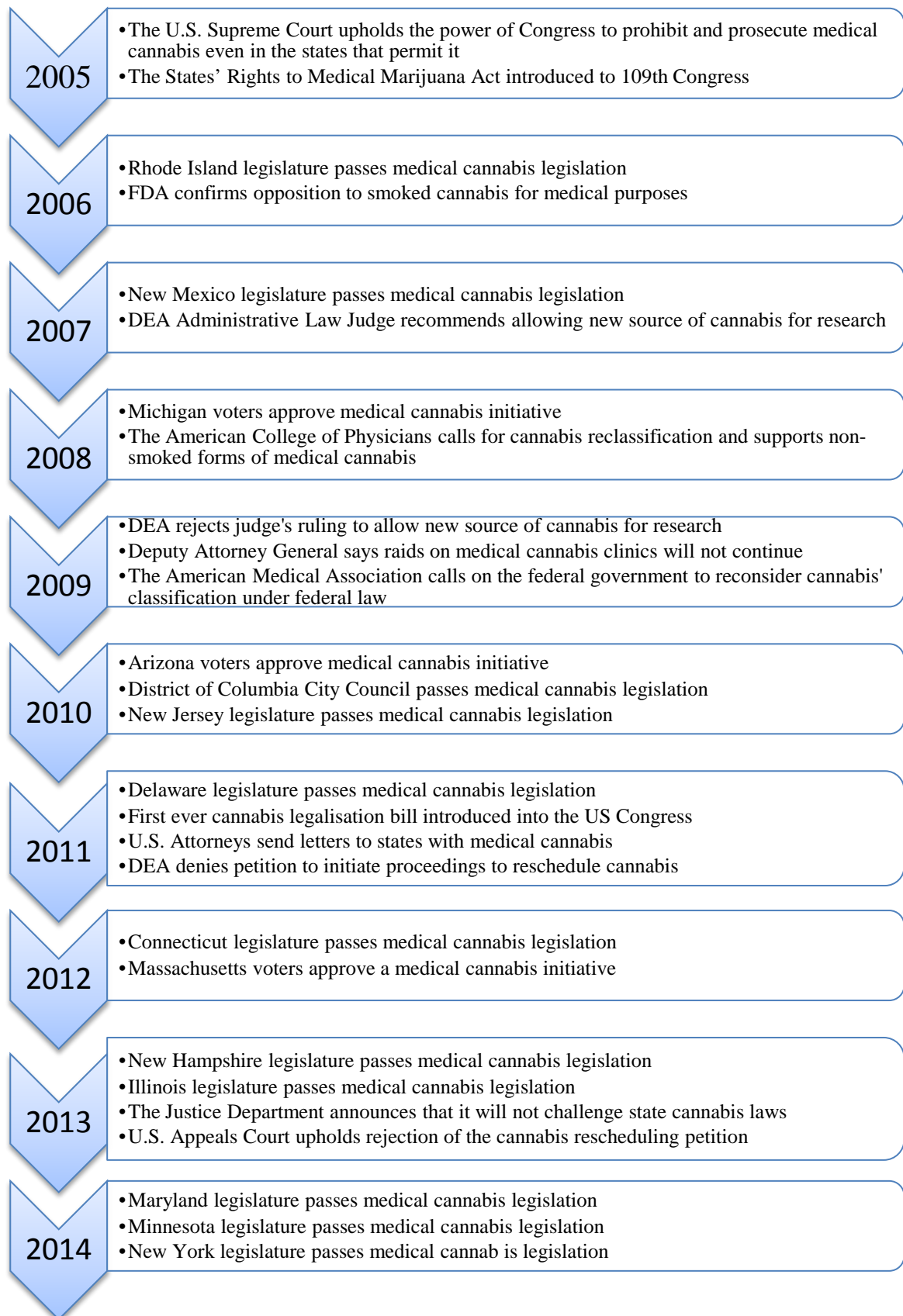


Figure 1. Time chart of medical cannabis in the U.S. since the enactment of the CSA.

The 1970 CSA authorised the creation of a National Commission on Marihuana and Drug Abuse and President Nixon appointed Raymond P. Shafer, formerly Governor of Pennsylvania, to head the commission, which later became known as the Shafer Commission (Bonnie, 2001; Gieringer et al., 2008). Its purpose was to undertake a two-year study on cannabis and the causes of drug abuse in general. The commission reviewed the available literature on cannabis use and its effects and also sponsored its own research (Bonnie, 2001). In the same year, the National Organization for the Reform of Marijuana Laws (NORML) was founded by Keith Stroup, a public-interest attorney (NORML, 2014a). The NORML was founded as a non-profit public-interest advocacy group to oppose cannabis prohibition and favour an end to the practice of arresting cannabis users.

In a special message to the Congress on Drug Abuse Prevention and Control on 17 June 1971, President Nixon said that drug abuse had assumed the dimensions of a national emergency and that he was therefore “transmitting legislation to the Congress to consolidate at the highest level a full-scale attack on the problem of drug abuse in America” (Nixon, 1971). The movement later became more commonly known as the “War on Drugs”. In 1972 the Shafer Commission issued its first report which found that “there is no evidence that experimental or intermittent use of marihuana causes physical or psychological harm” (as cited in Zeese, 1999, p. 344). The commission therefore recommended decriminalisation of possession of cannabis for personal use and casual distribution in private of small amounts of cannabis, but that growing and selling of cannabis remain a criminal offence (Bonnie, 2001; Zeese, 1999).

While President Nixon immediately rejected the recommendations, the publication of the commission’s findings reflected a shift in elite opinion. The report

was followed by the National Conference of Commissioners on Uniform State Laws supporting amendments to the CSA based on the commission's recommendations and the endorsement of some forms of cannabis decriminalisation by various national organisations (Bonnie, 2001; Caulkins, 2012). In 1977, in a message to the U.S. Congress, President Carter endorsed the findings of the Shafer Commission and decriminalisation of cannabis (Bertram, Blachman, Sharpe, & Andreas, 1996; Bonnie, 2001). However, political and legislative support for cannabis decriminalisation was decreasing and the more permissive stance on cannabis decriminalisation during the Carter Administration led to an increase in public resistance and opposition from lobby groups (Bonnie, 2001). In 1982, the National Academy of Sciences came to similar conclusions as the Shafer Commission in relation to cannabis, and the findings were rejected by President Reagan (Bertram et al., 1996; Gieringer et al., 2008).

In 1972, the NORML foundation filed the first ever administrative petition with the Bureau of Narcotics and Dangerous Drugs (BNDD) to move cannabis to Schedule II of the CSA (Koch, 1999; Zeese, 1999). This schedule encompasses drugs that have a strong potential for abuse or addiction but also have recognised medical use (CSA, 1970). Substances placed in this schedule include morphine, cocaine, and oxycodone. The petition was rejected by the BNDD and the NORML appealed the decision. In 1974, the U.S. Court of Appeals for the District of Columbia Circuit ordered the BNDD to process the NORML petition (Zeese, 1999). It wasn't until 1986 that the Drug Enforcement Administration (DEA) initiated public hearings on whether cannabis should be rescheduled (Clark, 2000). The hearings lasted two years, and in 1988 Judge Francis L. Young recommended that cannabis be moved from Schedule I to Schedule II. However, as his ruling was a recommendation only, the final decision was left to the

DEA administrator (Clark, 2000). In 1989 the DEA administrator John Lawn overruled Judge Young's ruling to reschedule cannabis and stated that there was no scientific evidence to support claims that cannabis is better than other drugs used in the treatment of any medical condition (Koch, 1999; Werner, 2001). Cannabis research projects are rarely approved due to a complicated federal approval process and the difficulty of obtaining research-grade cannabis; this makes it difficult for scientific evidence to be obtained (Marshall, 2005). Martin and Rashidian (2014) note that "the federal government has never approved a plant in its entirety as medicine, and it's unlikely it is going to begin with the controversial cannabis plant" (p. 17).

In 1974, the National Institute on Drug Abuse (NIDA) was established as a federal government research institute "for research, treatment, prevention, training, services, and data collection on the nature and extent of drug abuse" (National Institute on Drug Abuse, [NIDA], 2014b). It is the single official source of cannabis for medicinal research. The institute funds a wide range of research on cannabis and also supports a drug supply program which provides research-grade cannabis to researchers (NIDA, 2014a). The NIDA contracts with the University of Mississippi to grow cannabis for use in research and it is there that cannabis is grown, harvested, stored and made into cigarettes or other purified elements of cannabis. To obtain research-grade cannabis through the NIDA, the research must be approved by the Food and Drug Administration (FDA), the DEA, and the NIDA (NIDA, 2014a).

The FDA approval process. In the U.S., before a drug can be prescribed, it needs to undergo the FDA's approval process. Under the federal Food, Drug, and Cosmetic Act, to be approved by the FDA, the drug in question first needs to be tested as an Investigational New Drug (IND). Sponsors of the drug need to complete

preclinical testing in laboratory animals to demonstrate its effectiveness and safety and outline what they propose to do for human testing, following which the FDA decided whether it is safe for the drug to be tested in humans. This stage is followed by clinical trials in humans and after extensive testing showing effectiveness and safety, a potential manufacturer is required to file a New Drug Application with the FDA. It is then up to the FDA to determine whether the drug is safe and effective for its proposed use, whether the benefits of the drug outweigh its risks, and whether the methods used in manufacturing the drug and the controls used to maintain the drug's quality are adequate to preserve the drug's integrity, strength, quality, and purity (Federal Food, Drug, and Cosmetic Act, 2000). The decision is made based on clinical trials, where the drug in question has to be proven safe and effective for human use (Federal Food, Drug, and Cosmetic Act, 2000; Joy, Watson, & Benson, 1999). If the FDA determines that the benefits of the drug outweigh its risks, it will allow it to be manufactured (Federal Food, Drug, and Cosmetic Act, 2000). For cannabis, the process is made more difficult due to cannabis' Schedule I classification and the fact that cannabis for research can only be obtained through the federal government (ACP, 2008; Joy, et al., 1999).

In 1976, Robert Randall, a glaucoma patient, became the first person to use a medical cannabis necessity defence to defend himself against cannabis charges (Gieringer et al., 2008). With the support of his doctor, Randall argued that cannabis was the only drug that would prevent him from going blind (Gieringer et al., 2008). After the charges were dropped Randall successfully lobbied the federal government to allow him access to medical cannabis under the IND program, becoming the first U.S. citizen to receive federally supplied cannabis under the IND program. Randall also lobbied for cannabis' rescheduling and in 1981 he formed the Alliance for Cannabis

Therapeutics to lobby state legislatures to protect medical cannabis patients from arrest and prosecution (Gieringer et al., 2008; Werner, 2001).

The IND program was established in 1976 and the patients were considered to be participants in research on medical cannabis (Gieringer et al., 2008). As part of the program, a limited number of patients were approved by the FDA to receive government supplies of medical cannabis grown at the University of Mississippi. It was difficult for patients to qualify for the program and it was expanded to approximately 30 patients until suspended in 1991 and closed in 1992 by the Bush Administration, who believed too many people were seeking access to medical cannabis supplies and they did not want to send the wrong message to the public (Clark, 2000; Werner, 2001). As the decision proved unpopular, it was decided that already approved program participants would receive cannabis for the rest of their lives while others would be prescribed dronabinol (distributed in the U.S. as Marinol), a synthetic form of Delta-9-Tetrahydrocannabinol (THC) (Gieringer et al., 2008; Werner, 2001).

First medical cannabis IND program. In 1978, New Mexico became the first state to pass legislation recognising cannabis as a medicine (Koch, 1999). By 1983, 34 states had enacted legislation which allowed their health departments to conduct research on the effectiveness of cannabis as a medicine under the IND program (Koch, 1999; Werner, 2001). The cannabis required for research was to be supplied by the federal government. However, due to its classification as a Schedule I substance, cannabis could only be distributed to patients through the NIDA (Werner, 2001). The process proved to be difficult and only six states (New Mexico, California, New York, Tennessee, Michigan, and Georgia) obtained research-grade cannabis for medical cannabis research; the other states received oral THC pills (Koch, 1999; Werner, 2001).

In June 1985, dronabinol (Marinol) was moved to Schedule II of the CSA (Werner, 2001). Marinol was approved for use in the treatment of the AIDS wasting syndrome, and nausea and vomiting associated with cancer chemotherapy (ACP, 2008). The rescheduling followed research which indicated that THC was effective in the treatment of nausea. Marinol was reclassified as a Schedule III substance in 1999, after a study found that Marinol had low abuse potential. However, it has been suggested that the federal government decided to make THC legally available after political pressure in support of cannabis and in an effort to stem medical demand for cannabis in its natural form (Gieringer et al., 2008; IOM, 1999; Zeese, 1999). Access to cannabis remained limited, and as Werner (2001) states:

Despite the fact that a synthesized and concentrated version of cannabis' most active compound was rescheduled, the source plant was not. With marijuana withheld, and synthetic THC available by prescription, the state medical marijuana research programs slipped into dormancy. (p. 22).

In 1991, San Francisco activists succeeded in getting "Proposition P" on the ballot which passed with 79 percent of the vote (Zeese, 1999). The initiative was in favour of patients having access to cannabis for medical purposes. The same year, following an appeal to the U.S. Court of Appeals by the Alliance for Cannabis Therapeutics and the NORML, the Court rejected the DEA's 1989 findings that there was no scientific evidence to support medical cannabis claims and reschedule cannabis and ordered the DEA to reconsider their position. The DEA did not change their view. The decision was again appealed, and after 22 years of litigation the final decision was rendered by the U.S. District Court of Appeals upholding the DEA's decision to keep

cannabis in Schedule I (Pacula, Chriqui, Reichmann, & Terry-McElrath, 2002; Zeese, 1999).

After the failed litigation to reschedule cannabis, a national movement emerged. In 1995 activists in California gathered the required signatures for a medical cannabis proposition and in 1996 California became the first state to legalise the cultivation, possession and use of cannabis for medical purposes when it passed Proposition 215, a ballot initiative, with 56 percent of the vote in favour (MPP, 2013; Zeese 1999). This was at odds with the federal law which prohibits possession, sale and cultivation of cannabis. In the same year Arizona voters also passed a medical cannabis initiative but it was ineffective because it required medical cannabis patients to have a doctor's prescription. It should be noted that using the word "prescribe" made the law ineffective, as doctors cannot legally prescribe an illegal substance to their patients (Delaney, 2010a). In 1998, voters in Alaska, Oregon, Washington and the District of Columbia (D.C.) passed medical cannabis initiatives similar to California (MPP, 2013). However, the DC initiative did not take effect until 2010 as Congress was able to prevent it from taking place because D.C. is a district and not a state (MPP, 2013).

While the states were passing medical cannabis laws, in 1998 former Presidents Ford, Carter, and Bush released a statement urging voters to reject state medical cannabis initiatives (Mack & Joy, 2000). The presidents said that the state initiatives bypassed the FDA approval process and believed that medicine must be based on science and not political appeals (Mack & Joy, 2000). However, medical cannabis initiatives continued to be passed and in 1999 Maine voters also approved a medical cannabis initiative (MPP, 2013).

In 1999, the IOM published the findings of their comprehensive study on medical effects of cannabis (IOM, 1999). The study was requested by the White House Office of National Drug Control Policy (ONDCP) as a critical review of scientific evidence pertaining to medical use of cannabis (IOM, 1999; Mack & Joy, 2000). The report recognised that cannabis has therapeutic properties and recommended that the drug be made available to individuals requiring it (IOM, 1999). The 1999 IOM report outlined both positives and negatives of cannabis use and found evidence that cannabis can offer “broad-spectrum” relief from severe pain, nausea, and appetite loss associated with AIDS or chemotherapy patients; offered moderate promise for alleviating symptoms associated with muscle spasticity; and was least promising for movement disorders, epilepsy and glaucoma. It found no significant data showing that cannabis was a “gateway” drug, leading to other drug use. The report concluded that:

The critical issue is not whether marijuana or cannabinoid drugs might be superior to the new drugs, but whether some group of patients might obtain added or better relief from marijuana or cannabinoid drugs. (p. 153).

In 2000, Nevada and Colorado voters also passed medical cannabis initiatives (MPP, 2013). The same year, Hawaii’s legislature became the first to pass a law to remove criminal penalties for medical cannabis. In 2001, in the first medical cannabis case heard by the U.S. Supreme Court, the U.S. government sued the Oakland Cannabis Buyers’ Cooperative, organised to distribute cannabis for medical purposes to qualified patients, to cease operating as their activities violated the CSA’s prohibitions on distributing, manufacturing, and possessing with the intent to distribute or manufacture cannabis (United States v. Oakland Cannabis Buyers' Cooperative, 2001; MPP, 2013).

The U.S. Supreme Court ruled that there is no medical necessity exception to the CSA and that the medical necessity defence cannot be used to avoid federal prosecution by third parties seeking to manufacture or distribute cannabis for others who need it (United States v. Oakland Cannabis Buyers' Cooperative, 2001; MPP, 2013). However, the question of whether individual patients charged with personal possession or cultivation can use the medical necessity defence was left open. It is notable that the CSA makes no distinction between medicinal and recreational use of cannabis. The second and last medical cannabis case to be heard at the federal level was “Gonzales v. Raich” (Gonzales v. Raich, 2005; MPP, 2013). The case followed DEA raids on two medical cannabis patients who argued that the federal government’s powers to regulate interstate commerce did not extend to their personal use and cultivation of medical cannabis. In 2005, the U.S. Supreme Court ruled that the Congress has the power to ban the use of medical cannabis even where states approve its use for medicinal purposes (Gonzales v. Raich, 2005). The court did not question the validity of the state laws and the patients remained protected under state, but not federal law.

In 2003, during the 108th Congress, in response to DEA raids on medical cannabis users and providers in states with medical cannabis laws, Representative (Rep.) Maurice Hinchey and Rep. Dana Rohrabacher introduced a bipartisan bill seeking to prevent the Department of Justice from using appropriated funds to interfere with the operations of medical cannabis laws in states with such laws (Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2004). Between 2003 and 2007 the bill was debated and rejected five times, the opponents arguing that smoked cannabis is not safe and effective as medicine and sends the wrong message to young people (Eddy, 2010).

A more specific bill, the States' Rights to Medical Marijuana Act (2005), was introduced in 2005 and sought to move cannabis from Schedule I to Schedule II of the CSA. It also sought to provide that in states with medical cannabis laws no provisions of the CSA or the Federal Food, Drug, and Cosmetic Act could prohibit or restrict prescription or recommendation of cannabis by a physician for medical use or an individual from obtaining and using cannabis from a prescription or recommendation of cannabis by a physician for medical use by such individual. The bill was never referred to a committee hearing (Eddy, 2010).

In 2004, Montana voters approved a medical cannabis initiative and Vermont's legislature passed medical cannabis legislation and in 2006 Rhode Island became the 11th state to legalise medical cannabis after its legislature overrode the governor's veto (MPP, 2013). In 2006, the FDA said that they opposed medical cannabis and supported its listing in the most restrictive CSA Schedule I (FDA, 2006). The FDA stated that smoked cannabis is harmful, and that no scientific evidence supports its medical use. They also said that there are FDA-approved medications for treatment of different conditions that can be used instead of cannabis. The agency also stated that if cannabis were to be marketed, there would need to be sufficient scientific evidence showing it is safe and effective to use (FDA, 2006). However, due to federal opposition to medical cannabis and a difficult research approval process, few controlled studies have been approved and conducted in the U.S. (Marshall, 2005).

In another first for New Mexico, attempts to legalise medical cannabis were successful in 2007, when Democratic (D) Governor (Gov.) Bill Richardson became the first governor in history to enact a medical cannabis law while running for the presidency (Lynn and Erin Compassionate Use Act, 2007; MPP, 2013). He signed

Senate Bill 523 into law, making New Mexico the 12th state to allow medical cannabis use for qualifying patients. The House of Representatives approved the bill by a 36-31 vote, while the Senate approved it 32-3 (MPP, 2013).

Showing how difficult it is to obtain cannabis for research purposes, Lyle Craker, at the University of Massachusetts, petitioned the DEA for permission to cultivate cannabis to use in university-approved clinical studies on cannabis' effectiveness as a medicine (Eddy, 2010; MPP, 2013). In 2007, the DEA Administrative Law Judge, Mary Ellen Bittner, recommended that Craker's application be granted and concluded that "there is currently an inadequate supply of marijuana available for research purposes, that competition in the provision of marijuana for such purposes is inadequate..." (U.S. Drug Enforcement Administration, 2007, p. 87). The Judge also concluded that Craker's registration to cultivate cannabis would be "in the public interest". However, because rulings by administrative law judges are nonbinding, in 2009 the DEA rejected Judge Bittner's recommendation (Lyle E. Craker; Denial of Application, 2009). It wasn't the first time the DEA rejected an administrative law judge's recommendation, as it previously happened to Judge Young's 1998 ruling.

On November 4, 2008, the Michigan Medical Marihuana Act (2008), which allows the use of medical cannabis for qualifying patients, was approved by Michigan voters through a ballot initiative. The same year the ACP questioned cannabis' Schedule I placement and urged a review of this (ACP, 2008). The ACP said they supported programs for scientific research into cannabis as a medicine, but also noted that the research has been limited by a difficult approval process, difficulty in obtaining research-grade cannabis, and the legalisation debate (Clark, 2000). The American Medical Association (AMA) (2009) also called for more controlled clinical studies to be

conducted on cannabis as a medicine and recommended a review of cannabis' Schedule I classification in order to enable more research to be conducted on its potential as a medicine. The association also urged the National Institutes of Health (NIH) to implement administrative procedures which would assist in developing and conducting clinical trials into medicinal properties of cannabis (AMA, 2009).

In October 2009, the Obama Administration Deputy Attorney General David Ogden issued a memorandum to U.S. attorneys saying that in states with medical cannabis laws federal resources should not focus on individuals whose actions “are in clear and unambiguous compliance with existing state laws providing for the medical use of marijuana” (U.S. Office of the Deputy Attorney General, 2009, p.2). The announcement followed a pledge that was made by then-candidate Obama during the presidential campaign (Eddy, 2010). In a subsequent memorandum in June 2011, Deputy Attorney General James Cole reaffirmed that medical cannabis patients should not be targeted and stated that “it is likely not an efficient use of resources to focus enforcement efforts on individuals with cancer or other serious illnesses who use marijuana as part of a recommended treatment regimen consistent with applicable state law, or their caregivers” (U.S. Office of the Deputy Attorney General, 2011, p.1). However, he also added that state laws or local ordinances are not a defence to civil or criminal enforcement of federal law with respect to individuals who are in the business of cultivating, selling, or distributing cannabis and are in violation of the CSA (U.S. Office of the Deputy Attorney General, 2011).

In 2010 Arizona voters approved a medical cannabis initiative (MPP, 2013). This law used the word “certification” instead of “prescription” which made the medical cannabis law effective, unlike the state's 1996 measure. The same year, New Jersey

legislature passed medical cannabis legislation (MPP, 2013). New Jersey became the first state to enact a medical cannabis law that did not provide for home cultivation but relied solely on medical cannabis dispensaries.

Medical cannabis since 2010. Since 2010, there has been an increase in medical cannabis laws being passed through the legislative process; Delaware, Connecticut, New Hampshire, Illinois, Maryland, Minnesota and New York legislatures passed medical cannabis legislation. Since Arizona voters approved a medical cannabis initiative in 2010, all other state laws to date were passed by the legislature. At the time when the material for this thesis was collected, 17³ of 50 U.S. states and the District of Columbia have enacted laws allowing the use of cannabis for medical purposes (MPP, 2013; ProCon.org, 2014). Ten of the state medical cannabis laws were passed by a ballot initiative and seven were passed by the legislature (ProCon.org, 2014). It is important to note the role of state legislatures in the medical cannabis movement, as only 17 U.S. states and the D.C. have an initiative process under which citizens can, by collecting a specified number of signatures on a petition, place an issue before the state's electorate (Birkland, 2005; Britannica Educational Publishing [BEP], 2010; Howard, 2005; Initiative and Referendum Institute [IRI], 2009; Katz, 2003). This means that 27 states must rely on their state legislatures to enact medical cannabis laws.

In 2011, a first ever federal cannabis legalisation bill was introduced into the U.S. House of Representatives (Ending Federal Marijuana Prohibition Act, 2011). The bill sought to remove cannabis from the CSA schedule and remove prohibition on its

³ Since 2011, when the material for this thesis was collected, six more states enacted medical cannabis laws, taking the number of states with medical cannabis laws to 23.

import and export; the language of the bill was similar to the changes enacted by the Congress to repeal the federal prohibition of alcohol (NORML, 2011). On their website, the NORML stated that their organisation along with representatives from the Drug Policy Alliance (DPA), Students for Sensible Drug Policy and the Marijuana Policy Project (MPP) worked closely with members of Congress in drafting the bill (NORML, 2011). The bill was not enacted and was introduced again during the 113th U.S. Congress (Ending Federal Marijuana Prohibition Act, 2013).

In 2011, the DEA also rejected a petition to reschedule cannabis in “Americans for Safe Access v. DEA” (2013) and the rejection of the rescheduling petition was upheld in federal court in 2013 (MPP, 2013; U.S. Drug Enforcement Administration, 2011). However, in 2013 Deputy Attorney General James Cole again issued a memorandum to federal attorneys in which he outlined the federal law enforcement policy in relation to state medical cannabis laws and instructed federal attorneys and law enforcement to focus their resources and efforts on the enforcement priorities outlined in the memorandum, while emphasising that “the Department of Justice has not historically devoted resources to prosecuting individuals whose conduct is limited to possession of small amounts of marijuana for personal use on private property” (U.S. Office of the Deputy Attorney General, 2013, p.2). He also wrote that the federal government has traditionally relied on states and local law enforcement agencies to address cannabis activity through the enforcement of their own laws. The interplay between state and federal government will be further discussed in Chapter Two.

Overall, over the years medical cannabis activists have turned to state and local governments in order to pass medical cannabis laws and enable patients to obtain cannabis for medical purposes. While the state medical cannabis laws are effective at

the state level, the laws put the states in violation of federal laws because cannabis is a Schedule I substance according to the CSA (Eddy, 2010; MPP, 2013). Medical cannabis patients, their caregivers, and cannabis providers can therefore be arrested and prosecuted at the federal level, although the federal government has indicated as recently as 2013 that prosecuting medical cannabis patients would not be their priority. However, what has also been created by state medical cannabis laws is what Cohen (2010) referred to as a “regulatory vacuum” creating an absence of appropriate state regulations to control the distribution and use of medical cannabis. As Cohen put it:

It should be obvious that unless physicians adhere to their ethical and fiduciary responsibilities to patients, controlling the number of dispensaries or limiting the areas allowed for cultivation will not suffice to allow marijuana to be treated as a genuine medication recommended in good faith as part of the legitimate practice of medicine. (p.659).

There has also been a push to reschedule cannabis from Schedule I of the CSA in order to permit medical use. However, the federal government has maintained its stance that cannabis is not safe and that no sound scientific studies supported medical use of cannabis (Cohen, 2010; Eddy, 2010). This has been made more difficult by restrictions placed on medical cannabis research, and the fact that the results of research that does get conducted are not always accessed by those who need to make policy-related decisions and are not always used as intended by scientists. Clark (2000) suggested that if cannabis were moved to Schedule II to be used for medical purposes, the federal government would be able to better regulate its use.

Medical cannabis advocates note that cannabis will most likely not be rescheduled until there is sufficient scientific evidence for its effectiveness (Marshall, 2005). However, cannabis research projects are rarely approved (Cohen, 2010; Marshall, 2005). Under the federal Food, Drug, and Cosmetic Act, the FDA decides whether a drug is sufficiently safe and effective to enter the marketplace (Federal Food, Drug, and Cosmetic Act, 2000). The decision is based on clinical trials, where the drug in question has to be proven safe and effective for human use (Federal Food, Drug, and Cosmetic Act, 2000; Joy, Watson, & Benson, 1999). The drug in question is first tested as an IND and, after a series of tests demonstrating its effectiveness and safety, a New Drug Application is filed with the FDA. If the FDA determines that the benefits of the drug outweigh its risks, it will allow it to be manufactured for commerce (Federal Food, Drug, and Cosmetic Act, 2000). The process is made more difficult due to cannabis' Schedule I classification and the fact that cannabis supply required for research can only be obtained through the federal government (ACP, 2008; Cohen, 2010; Joy, et al., 1999).

In spite of the impediments to conducting research on the medical use of cannabis, several scientific bodies have recommended such studies and have recommended a review of cannabis' scheduling. However, the recommendations have so far been rejected by the federal agencies and the DEA has also rejected the recommendations of its own administrative law judges. Cohen (2010) stated that the approval of any drug for medical use should be based on scientific evidence rather than political considerations and that such evidence should be used to weigh up the risks and benefits of cannabis use and whether it justifies its FDA approval for medical use. Cohen (2009) also questioned why legislators rather than experts acted to deny cannabis

being recognised as a medicine at the federal level, and why the use of cannabis for medical purposes was legitimised through legislation, ballot initiatives and referenda rather than by experts qualified by scientific training and experience.

As previously mentioned, there are many factors influencing the creation of public policy, and in terms of medical cannabis, while scientific evidence has played a part, there are other political and institutional dynamics at work in setting the policy, such as “presidents seeking public approval, bureaucrats seeking increased funding, members of Congress seeking re-election” (Bertram et al., 1996, p. 101). Cohen also argued that instead of being driven by scientific evidence and experts in what should have been a straightforward process, it has been complicated by “politics, ideology, prejudice, and unwarranted fear” (2009, p. 131). The understanding of the role of scientific evidence in the formation of medical cannabis policies will offer those individuals involved in research an insight into how scientific evidence can be given a more significant role in informing policy.

The present research sought to (a) Identify the main issues pertaining to the development and formation of medical marijuana policies in the U.S. and how problems and issues are recognised and raised; (b) Understand factors leading to different outcomes in medical cannabis policy; and (c) Examine the role that scientific evidence plays in passing medical cannabis legislation in the U.S. and the extent to which it informs the policy.

The current research focused on the following research questions:

1. What role does scientific evidence play in medical cannabis policy making?

2. What factors and processes have influenced medical cannabis policy creation?
3. What lead to medical cannabis policy being passed in states with current medical cannabis laws?

Chapter Two of this thesis describes the political context within which medical cannabis laws were passed by providing an outline of the U.S. political system. Chapter Three discusses cannabis as a medicine and provides a review of relevant medical cannabis literature. Chapter Four describes, chronologically, the passing, attempts to pass, and failure to pass medical cannabis policies in five U.S. states; two with a current medical cannabis law; one where attempts to pass a law have been made, but a law has not yet been passed; and two states where no or few attempts at passing a medical cannabis law have been made. These states are Michigan, New Mexico, Illinois, Kentucky, and Louisiana, respectively. Chapters Five and Six discuss the research design, sampling and data collection procedures, the techniques used for data analysis, and results for study groups One, Two, and Four. Finally, Chapter Seven will present the discussion of the research findings, the implications of the study, and directions for future research.

Chapter 2- The United States Political System

To understand the policy process, it is important to understand the political system. The political system of the U.S. is a distinctive and complex democratic system (Singh, 2003; Watts, 2010). Democracy is defined as government where the supreme power is vested in the people; exercised through their elected agents (U.S. Department of State, 2007). This chapter will discuss areas of the U.S. political system relevant to understanding policy formation, including the interaction between the two levels of government- federal and state.

The U.S. Constitution

The U.S. government, under its Constitution, is a federal, representative, democratic republic consisting of 50 states and one federal district (H.R. Doc. No. 108-94, 2003). The Declaration of Independence of 1776 and the Constitution of 1787 form the foundations of the U.S. government (H.R. Doc. No. 108-94, 2003; R. Harris & Tichenor, 2009). The Constitution assigns specific powers to the national government and the states, although these powers can often be intertwined (Volden, 2005). State governments make decisions affecting the daily life of people in their community, while the federal government makes decisions affecting the whole country. However, the powers assigned by the Constitution have been and are subject to interpretations by courts, the highest of which is the Supreme Court. Overall, the Constitution provides the people in government with enough power to effectively run the nation, but also makes it difficult to accumulate and abuse power (W. Storey, 2007).

The Constitution specifies three branches of the federal government: the Executive Branch; the Legislative Branch; and the Judicial Branch (H.R. Doc. No. 108-

94, 2003; W. Storey, 2007). Each branch has its own distinct responsibilities, but also limits the authority of others (K. Thomas, 2001). In order to prevent concentration of power, a series of checks and balances are written into the Constitution, permitting each branch to participate in and check and balance the powers of other branches. Although each branch is formally separate from the other two, there is also cooperation among the branches (Administrative Office of the U.S. Courts, 2003; Kaiser, 2001). The following section will describe the three levels of government in the U.S.; federal, state, and local government.

Federal Government

Executive branch. The Executive Branch of government is responsible for carrying out the political system's laws or directives (BEP, 2010; H.R. Doc. No. 108-94, 2003; Watts, 2010). It consists of the president, vice president, department heads (Cabinet members), and heads of various independent agencies (Dinan & Krane, 2006; H.R. Doc. No. 108-94, 2003; R. Harris & Tichenor, 2009). The president is the head of the executive branch of the federal government (Watts, 2010). The president's term of office lasts four years and the president may be re-elected for only two terms (BEP, 2010).

Federal bureaucracy. Bureaucrats, or government employees, play an influential role in shaping public policy (Birkland, 2005; Kaufman, 2001; Singh, 2003). Those who act as advisors to a branch of the federal government also have, through the way they do their job, the potential to directly influence policy-makers (Kaufman, 2001). The bureaucracy's main functions are executing laws, creating rules, and the implementation of public policy. It is also responsible for adjudicating disagreements over laws and their interpretation (Singh, 2003). All three branches of government

influence the shape and role of federal bureaucrats. For example, Congress has the authority to establish and instruct agencies; the president has the authority to appoint department and agency heads; and the federal court has the authority to determine whether agency actions are constitutional (BEP, 2010; Singh, 2003). Also, federal, state, and local governments may have bureaucracies working on specific issues such as education or health (Singh, 2003).

Federal Legislative branch. Congress is the legislative branch of the U.S. federal government (Watts, 2010). Congress consists of two chambers; the House of Representatives and the Senate. Between them, the two chambers are responsible for making federal law in the areas set out in the Constitution. They are responsible for deciding on taxation and how taxes should be spent, borrowing money on behalf of the U.S., regulating commerce, coining money, declaring war, raising and supporting armies, and making all laws necessary for the execution of Congress' powers (H.R. Doc. No. 108-94, 2003; W. Storey, 2007). In addition, Congress acts as a watchdog over other branches of the federal government, the Executive and the Judiciary (H.R. Doc. No. 108-94, 2003).

House of Representatives. The House of Representatives comprises 435 Members who are elected to two-year terms from among the 50 states. In addition, nonvoting delegates from the D.C. and the U.S. territories are also elected to a two-year term. The members are distributed according to population, so that the larger the state's population, the more representatives it is allocated (Cushman, 2005; H.R. Doc. No. 108-94, 2003; Watts, 2010). Each state must have at least one house seat and each member has only one vote (Cushman, 2005; H.R. Doc. No. 108-94, 2003). Each chamber can introduce legislation on any subject, but revenue bills must originate in the House of

Representatives, and both chambers need to approve a bill in order for it to be passed (Cushman, 2005; Watts, 2010).

Senate. The Senate is intended to provide for state representation in Congress, protect the interest of the states, and provide a check upon the House of Representatives (H.R. Doc. No. 108-94, 2003; Watts, 2010). The Senate comprises 100 members, two for each of the 50 states. Senators serve for six years, with a third of the membership of the Senate elected every two years (H.R. Doc. No. 108-94, 2003). Each senator has one vote (H.R. Doc. No. 108-93, 2003; Watts, 2010).

How a bill becomes law. A member of Congress may introduce a proposal in one of four forms: the bill, the joint resolution, the concurrent resolution, and the simple resolution (H.R. Doc. No. 108-93, 2003). The Member's constituents also have the right to petition and pass on their proposal to the Member for consideration. Any Member can introduce a bill at any time, while the Congress is in session (Birkland, 2005). The following section will describe the bill passing process only, as it is relevant to this thesis.

The process. Before a bill becomes law it must be approved by both chambers and signed into law by the president. Bills may originate in either of the chambers, though the Constitution specifies that all bills concerning the raising of revenue must originate in the House of Representatives (Birkland, 2005; H.R. Doc. No. 108-94, 2003). Anyone may draft a bill but only members of the Congress can introduce legislation and therefore become the bill's sponsor (s). After a proposal is drafted into bill form, it is introduced into one of the two Chambers. If the author is a Senator, the

bill is introduced in the Senate; if the author is a Representative, the bill is introduced in the House of Representatives (Birkland, 2005; H.R. Doc. No. 108-94, 2003).

As soon as a bill is introduced it is assigned, according to the subject area, to the appropriate committee for its first hearing. The committee seeks the input of the relevant departments and agencies. During the committee hearing, the author presents the bill to committee, subcommittees may make reports on the bill, and testimonies in support or opposition to the bill may be heard. The committee votes whether to pass the bill on or pass with amendments. A majority vote is needed to pass the bill out of the committee and onto the floor of the chamber where it originated or to the next committee. If the bill is passed by the committee it was assigned to, it is read a second time on the floor of the house where it originated, and a bill analysis is prepared before the third reading. If the committee does not act on a bill, the bill is “dead” and does not progress further (Birkland, 2005; H.R. Doc. No. 108-94, 2003).

At the third reading, the bill is read and explained, discussed by members, and voted on (H.R. Doc. No. 108-94, 2003). A majority vote is required for the bill to be passed. When the bill is approved by the house of origin, it is passed onto the other house where the same procedure is repeated. A bill that has been agreed to by both houses is sent to the president for approval, and becomes law after either presidential approval, failure by the president to return it with objections to the House of origin within 10 days, or the overriding of a presidential veto by two thirds of the vote in each House (Birkland, 2005; H.R. Doc. No. 108-94, 2003).

Judicial branch. The federal Judiciary explains and applies the law and serves as a check on potential government abuse of power (H.R. Doc. No. 108-94, 2003; W.

Storey, 2007; U.S. Department of State, 2007). The Supreme Court is the highest court in the federal judiciary, and is also the final court of appeal. The Constitution does not stipulate the number of Supreme Court Justices and their number is determined by the Congress (Administrative Office of the U.S. Courts, 2003; Barker, 2005).

State Government

State and Federal governments are independent, although there is an evolving relationship between the two and a historical drift of power from states to the federal government (Babcock, 1965; Grodzins, 1960; Watts, 2010). Although the power of the federal government has grown significantly since the Constitution was written, states still have responsibility for most issues within their own borders such as education, health, transportation, and law enforcement (W. Storey, 2007; K. Thomas, 2001; U.S. Department of State, 2007). They are limited in their authority regarding regulation of foreign imports and exports, or the conduct of foreign affairs (K. Thomas, 2001).

The U.S. history is marked by an ongoing debate over states' rights versus federal rights and the issue of states' rights has always been a contentious area (Drake and Nelson, 1999). States' rights calls for the limitation of powers of the federal government, with the belief that states could best resolve pressing issues and protect the rights of individuals. While decision makers from two or more governments may cooperate with each other in one policy area, they may have conflicting views in a different area (Dinan & Krane 2006; Drake and Nelson, 1999; Williams, 2009). States can also differ with each other over policy issues and can adopt different approaches to the same issue.

It is suggested by Dinan and Krane (2006) that the reason for national policy making is the lack of action by state governments. Conversely, state governments often engage in policy initiatives because of inactivity at the federal level in relation to a particular problem (Dinan & Krane, 2006). Each state has their own Constitution which outlines the government's structure and responsibilities (Williams, 2009). State constitutions differ significantly from the federal one; they are longer, more detailed, and cover more topics. However, state constitutions do not and cannot contradict the U.S. Constitution, which can override a state constitution. Both the federal Constitution and federal statutes can override the state constitutional provisions. States also have to respect laws and court decisions in other states. Like the national government, the states have a separation of powers between three branches of government: executive, legislative, and judicial. Each branch is checked and balanced by each other, and by the federal government (Williams, 2009).

Executive branch. The executive government is responsible for executing the laws of the state (U.S. Immigration and Naturalization Service, 1987; Williams, 2009). The state executive branch of government is headed by the governor. The role and importance of governors vary according to the individual state. The term of a governor's office also varies among states, but today all but two governors serve for four years. Some states also have restrictions on the number of terms a governor can serve. The governor is responsible for advising the state legislature on laws concerning the state, proposing new laws, calling special sessions of the state legislature, and serving as head of the state's National Guard. In all but two states, the governor also has the power to veto bills passed by the legislature, and in all but seven states the governor can also use a line-item veto which enables them to block specific sections of a bill (Watts, 2010).

Similar to the federal government, the Executive Branch of state government consists of a group of advisors who perform special duties, such as the Secretary of State and Attorney General (U.S. Immigration and Naturalization Service, 1987; Williams, 2009). The influence of a governor also depends on the extent to which they share executive power with other elected officials and agencies. In Michigan, for example, there are many state-wide elected officials and agencies and there is therefore less opportunity for the governor to coordinate and control the executive branch (Watts, 2010).

Legislative branch. Every state except Nebraska has a legislative branch similar to that of the federal government, with two separate legislative chambers or houses (U.S. Immigration and Naturalization Service, 1987; Williams, 2009). Nebraska is an exception to this as it has a unicameral legislature (Williams, 2009). The term of office varies amongst the 50 U.S. states; usually the term of office in the Senate is four years, and two years in the House of Representatives (U.S. Immigration and Naturalization Service, 1987; Williams, 2009). The number of members in each house also differs, with each state having their own procedure for deciding the number of members. The procedure for making laws is seen by some as being very similar to the federal government, while others believe the state legislative process is more constricted and subject to a variety of constitutional limitations (Williams, 2009). The Legislature's passing of laws can also be affected by direct democracy in the form of the initiative and referendum, as discussed below (Cushman, 2005; Williams, 2009).

Judicial branch. The state Judicial Branches only hear those cases involving state or local law (United States Courts, n.d.). The state Judicial Branch is similar to the federal system and consists of a hierarchy of courts. Courts that handle specific legal matters (e.g. Family Court, Traffic) along with the Municipal County Magistrates Court

are the lowest and have a limited jurisdiction. At the next level are the state trial courts (e.g. District, Superior, Common Pleas). They are followed by an intermediate Court of Appeals, which is not found in all states. The highest court at the state level is the state Supreme Court (United States Courts, n.d.).

Local Government

Local governments are created by state governments rather than the U.S. Constitution and are the most common form of government in the U.S. (U.S. Immigration and Naturalization Service, 1987; U.S. Department of State, 2007; Zimmerman, 2012). The state government provides the local government with a “charter”, which describes its role, structure, and authority.. Local governments are controlled and checked by the state government, and have the power to perform only those functions assigned by the state. There are four levels of local governments, with all U.S. residents living within a local government, whether it is a municipality, a special district, and/or sub-state jurisdictions such as counties (known as parishes in Louisiana and boroughs in Alaska) (Katz, 2003; Kincaid & Steytler, 2009). County governments were initially created as administrative arms of the states, but over time evolved into fairly autonomous governments with directly elected officials (Zimmerman, 2012). Connecticut and Rhode Island are the only states that do not have county governments. Twenty states have townships as local governments (Zimmerman, 2012). In some states townships can assume general government powers while in others they have limited powers. Municipalities (or cities, towns, boroughs, or villages) are general-purpose governments with directly elected legislative bodies (Zimmerman, 2012). The functions of municipal governments can vary across the states. Special districts are limited governments that provide a specific service, such as housing, water-

supply and transit boards, and school boards. Majority of all special districts only perform a single function (such as housing). In order to perform their functions, local governments receive funding from the state and federal governments and also collect property taxes and fees from their constituency (Sutton, 1974; U.S. Immigration and Naturalization Service, 1987; Watts, 2010). Local governments also have a court system, which deals with local issues such as traffic laws (Sutton, 1974; U.S. Immigration and Naturalization Service, 1987).

Direct Legislation

Some states provide their citizens with direct democracy through the initiative, referendum, and recall process (Birkland, 2005; BEP, 2010; Cushman, 2005). The history of direct legislation goes back to the 17th century and was primarily a result of social change and political reforms during the Progressive Era that span the end of the 19th to the beginning of the 20th century (Arnon, 2008). The reform was a reaction against the laws and widespread corruption in the representative system, in which the influence of interest groups and powerful party bosses who controlled their party members' voting patterns led to political dissatisfaction of the citizens. Direct legislation was created to act as a check on representative institutions and allow citizens to be involved in the legislative process (Arnon, 2008). It also allows the lawmaking power to be shared between the legislature and the people (Braunstein, 2004; Williams, 2009). Out of the states discussed later in this thesis, Michigan has an initiative, referendum and legislative process; New Mexico has a referendum and legislative process; Illinois has an initiative, popular referendum and legislative referendum; Kentucky has a legislative process; and Louisiana has a legislative referendum (Cushman, 2005; IRI, 2009). The initiative process is the process by which the people

introduce a new legislation and vote on it at the ballot (Arnon, 2008). The popular referendum is the process that allows the people to place acts of their legislature on a ballot and vote on it (Arnon, 2008). Only the initiative process will be described in this section because it was the only direct democracy process utilised in relation to the medical cannabis policy in the states reviewed in this thesis.

Over the past two decades, there has been an increase in initiatives in the U.S. (Watts, 2010). In total, 24 U.S. states and Washington D.C. have an initiative process under which citizens can, by collecting a specified number of signatures on a petition, place an issue before the state's electorate (Birkland, 2005; BEP, 2010; Howard, 2005; IRI, 2009; Katz, 2003). Of the 24 states with an initiative process, 18 states allow initiatives to amend the state constitution and 21 states allow initiatives to propose and pass laws. The initiative may either be direct or indirect. In most cases, once a required number of signatures have been collected, the measure is brought directly to the state's electorate for a vote of the people (direct initiative). Several states use the indirect initiative which allows the legislature to vote on the initiative first; if passed by the legislature, is not voted on by the electorate. However, if the proposal is not passed by the legislature, it is then put to a popular vote (Howard, 2005; IRI, 2009; Singh, 2003).

The initiative process is useful in cases where law makers are unwilling to enact or consider a law that the citizens want (Watts, 2010). The initiative process may also have an indirect effect on policy making by voters approving initiatives that define how future legislators govern, affecting citizen behaviour, giving legislators more accurate information about voter preferences, increasing the number of interest groups, and influencing how legislators behave (Bowler & Donovan, 2004). According to Bowler and Donovan (2004), the initiative process has a greater impact "where it is easier to get

a measure on the ballot, where it can more easily circumvent the legislative process, and, perhaps most important, where it is used the most” (p. 359). Over 60 percent of initiative activity in the U.S. has occurred in Arizona, California, Colorado, North Dakota, Oregon and Washington, which generally have lesser signature requirements than other states (Watts, 2010).

In the U.S., in 1998, \$400 million was spent nationally on ballot proposition campaigns (Matsusaka, 2005). Much of the research on the topic has indicated that monetary resources and a large interest group membership assist in the success of the initiative process (Boehmke & Bowen, 2010; Braunstein, 2004; Magleby, 1998). It has also been estimated that 78 percent of ballot campaigns have been won by the side that spent the most money (Braunstein, 2004). Due to the money required for initiative, Magleby (1998) suggested that agenda-setting and campaign management in initiatives is primarily organised by elites, but must involve mass audiences in order to place an issue on the ballot and win on election day. As a result, some initiative campaigns are seen as battles amongst wealthy economic interest groups who are trying to secure more favourable policy, and use signature gathering firms to quickly and cheaply secure ballot measures, with little consideration given to voter engagement. This results in a decrease in voter interest and debate on a particular issue. Boehmke & Alvarez (2014) found that because the signature collection process reaches some voters and not others, voter participation on a particular measure can vary across voters and within states.

Research has shown that the initiative process can lead to a greater participation by organised interest groups by providing them with the ability to propose legislation directly to voters (Boehmke & Bowen, 2010). Because the interest groups are traditionally disadvantaged in the legislature, the initiative process provides them with a

way to raise their policy concerns. An initiative process can increase the number of interest groups lobbying in the state by approximately 25 percent (Boehmke & Bowen, 2010). According to Boehmke and Bowen (2010), interest groups tend to campaign more publicly during issue campaigns in states with an initiative process than for debates in the legislature, and try to recruit new members to strengthen their side. As a result, media coverage of the issue increases, which then increases the scope and intensity of conflict, leading groups to work harder to win the support of individuals and increase their membership (Boehmke, 2002). Groups in initiative states tend to have more members than groups in states with no initiative. Interest groups in states with an initiative process also rely more on outside lobbying tactics to influence government action, mobilising members, and organising public displays of support to pass an initiative (Boehmke & Bowen, 2010).

Interest groups can use the initiative process to propose new legislation and to shape debate (Boehmke, 2008). It can also be used to influence decisions made by the legislature in a less direct way, by leading legislatures to choose policies that are close to the average voter preference to discourage interest groups from challenging policies by a ballot initiative (Boehmke, 2008; Bowler & Donovan, 2004). Also, the presence of particular measures on upcoming ballots may also encourage groups to mobilise or lobby. The interest groups that oppose the particular ballot measure may also start campaigning against the measure once the proponents show sufficient strength or their measure qualifies for the ballot (Boehmke, 2008). Boehmke (2008) viewed these groups as likely to be temporary in nature as they form in direct response to the threat posed by a particular measure. Once the threat is removed or fails, the opposition group is likely to dissolve. Therefore, the entry and exit rates of interest groups in states with the

initiative process are likely to be greater than in the states with no initiatives (Boehmke, 2008).

Initiatives also face legal challenge, as state and federal courts have in the past overturned the people's vote on state or federal constitutional grounds (Magleby, 1998; Theodore, 2013). The judicial process can also delay implementation of an initiative. As Magleby (1998) puts it, "The willingness of federal courts to overturn state initiatives on U.S. Constitutional grounds is an important manifestation of federalism" (p. 152). The constitutional assertion of federal constitutional sovereignty over the people's vote has in the past led to overturning of successful initiatives on issues such as the death penalty, abortion, homosexual rights, term limits, physician-assisted suicide, and illegal immigration (Magleby, 1998). As illustrated by the medical cannabis movement in the U.S., some state ballot initiatives can also be seen as trying to alter federal policy by stressing a state policy role in an area thought to be federal in nature.

One of the more prominent criticisms of the process is that voters lack education and competence to make policy decisions (Burnett & Parry, 2014; Matsusaka, 2005). Research has shown that most voters are uninformed about public policy, politics and government, which raises the concern that damaging policy may be adopted as a result (Burnett & Parry, 2014; Hastings & Cann, 2014). In the absence of information, an influence on voters' choice is the position taken by elites (Burnett & Parry, 2014; Hastings & Cann, 2014). Burnett and Parry (2014) found that voters rely on other evidence and that the governor's endorsement of a ballot measure can have an effect on voter choice; voters who disapproved of the governor's performance were significantly less likely to support the initiative while voters who approved of the governor's performance were more likely to support the measure (Burnett & Parry, 2014). It has

also been suggested that the ballot wording influences voters' choices. How the issue is framed also plays a role, and research has shown that even small changes in the presentation of an issue can produce changes in voter opinion (Druckman, 2001; Hastings & Cann, 2014). Another criticism is that well organised and wealthy interest groups may use voters' lack of knowledge to their own benefit, especially in cases of well organised, wealthy interest groups.

Informal Structures

Even though the U.S. has a constitution, most of the electoral structure (offices, branches, levels, procedures) is determined and regulated by federal and state laws outside the Constitution (Young, 2007). For example, the political party system is not included in the Constitution, and the Constitution does not encompass everything in the legal system. Although unofficial actors are not mentioned in the Constitution, they play an important role in the policy process (Birkland, 2005). In this section, four informal groupings relevant to the medical cannabis policy process will be discussed. These are interest groups, political parties and the party system, independent research organisations, and the media.

Interest groups. The democratic system of government in the U.S. allows for private associations, through which citizens can express their concerns and advance or defend their particular interests (Birkland, 2005; R. Harris & Tichenor, 2009; Singh, 2003). Interest groups are independent agencies, free of governmental control; although they frequently seek to influence it. Interest groups can have political significance when they try to influence public policy, propose new laws, or persuade government officials to act in their interest. However, not all interest groups have a political significance or interests (Birkland, 2005; R. Harris & Tichenor, 2009; Singh, 2003). The approach and

activities of most interest groups is determined by the group's mission, strategic goals, objectives, strategies and tactics (Leiden, 1995).

Five broad types of interest groups active in the U.S. include economic interest groups, public interest groups, sectional groups, attitude groups, and intergovernmental groups (Birkland, 2005; R. Harris & Tichenor, 2009; Singh, 2003). Economic interest groups include a range of corporations, labour unions, agricultural groups, and professional bodies. Citizen, or public interest groups, are those with open memberships that represent the interests of the general public (Boehmke, 2002). Sectional groups represent concerns of a particular group of individuals and include organisations such as the National Organization for Women. Attitude groups advocate a specific political position or an ideological orientation. Lastly, intergovernmental groups include public officials seeking to promote a cause and pressure other government institutions (Singh, 2003).

The main functions of interest groups are representation (express the views of citizens to government); citizen participation (allow ordinary citizens to become active in the nation's political life); public education (influence government and help educate citizens about government and its actions); agenda building (placing issues on the agenda and forcing decision-makers to act on specific issues); and programme monitoring (providing an additional check on government, making sure it is functioning properly) (R. Harris & Tichenor, 2009; Singh, 2003). Leiden (1995) suggested that many interest groups rarely make their true objectives public, and may be closely held by the group's leadership or advocates.

Over the years, the activism and influence of interest groups has expanded, and they now play a significant role in the U.S. political system (Singh, 2003). While some see them as being a positive influence, others accuse them of compromising the democratic process. For example, some interest groups provide both presidential and congressional candidates with a large amount of money for their campaign funding, which is seen as promoting special interests of the wealthy (Birkland, 2005; R. Harris & Tichenor, 2009; Singh, 2003).

Research has found that states with an initiative process have more interest groups (Boehmke, 2002). There is also a bias in the interest groups, with research showing that business groups and corporations tend to be overrepresented while broad-based membership groups are underrepresented (Boehmke, 2002). Interest groups also take the political and economic context into account when deciding whether to become active. The initiative process also increases interest groups' potential to affect policy and results in more groups being active in states with the initiative process. There is a relationship between the interest groups and initiative usage. According to Boehmke (2005) states with more citizen groups experience greater initiative use and states with more economic groups experience less initiative usage.

Political parties and the party system. Political parties are not mentioned in the U.S. Constitution (Singh, 2003). The U.S. currently has a two-party political system, dominated by the Democratic and Republican parties (English, 2003; Singh, 2003). While there are more than two parties, the two major parties have been dominant since the Civil War (Singh, 2003). In the U.S., the parties do not have the power to choose who represents them in the elections for Congress as this decision is made by the voters in each state or district in primary elections. Primary elections take the power of

candidate nomination from the party leaders to the people, in turn allowing the parties to be made more attentive to what their constituents want, hence allowing the two parties to keep their dominance of the system (English, 2003; Singh, 2003). As a result, most elected government officials are either Republicans or Democrats. Third parties can also have a significant influence and, if they manage to gain sufficient support, may be able to influence a major party by bargaining for its votes (Birkland, 2005; Singh, 2003).

Which party has control of the Congress can influence the passing of laws and other legislative functions. Congress is organised along party lines, and committee assignments are based on party affiliation (Birkland, 2005; English, 2003). However, political parties in the U.S. are weaker and more fragmented than in many other countries, and a party government is difficult to achieve. While there are differences between the ideologies of the two major parties, these differences are not fundamental; some Republicans have expressed Democratic sentiments, and vice versa (Krause & Bowman, 2005). In many cases, it is not in the interest of the party for all their members to vote the same way, and members must give consideration to how the voters will react to their actions. As party influence is not always very strong, members can often find that an independent stance on an issue can gain them more support from the voters (Birkland, 2005; English, 2003).

In order to gain power, a party has to win majority support from all levels and sections of society (Krause & Bowman, 2005; Singh, 2003). There are regional differences in voter support for the political parties, with parties known to dominate certain states. Over the years, however, a decrease has been observed in the strength of voter-party identification, which makes voters more unpredictable at election time (Singh, 2003). To win support the political parties have to, amongst other things,

constantly change their stance on issues in order to meet the expectations and changing views of the electorate. Party candidates also have to be carefully selected, in order to gain public approval and support. Overall, political parties play a significant role in the government system, from framing the nature of political debate to influencing decision-making, and providing an avenue for everyday citizens to influence the governmental decision-making process (Birkland, 2005; Singh, 2003).

Independent research organisations. Independent research organisations such as the Brookings Institution and RAND can play a role in informing and shaping public policy (Birkland, 2005). The organisations consist of academic scholars and policy experts, and provide information that policymakers can use when forming policies. Many of these organisations identify with a particular ideological position, while those associated with universities are generally more scholarly and less ideological. Federal, state and local governments often rely upon university research organisations to obtain expert advice (Birkland, 2005).

However, policymakers do not always have access to scientific research results and may turn to other sources for information (Ritter, 2009). There appears to be a discrepancy between the sort of information that policymakers require (simple summaries, policy-accessible language) and the information provided by many of the research organisations. Research evidence is therefore not the only factor influencing policy and other factors such as interest groups, legislative processes, and opportunistic windows can influence the decision-making process (Kaiser, 2001).

The media. The media is believed to play an important role in the democratic political system (Birkland, 2005; R. Harris & Tichenor, 2009). It is essential in

facilitating communication between citizens and their elected officials and providing information to the public, its role in the political system further enhanced by the advances in the mass media technologies (internet, blogging). The media can also act as a government “watchdog”; keeping an eye on politics and policy-making activities of the government and reporting them to the public (Birkland, 2005; R. Harris & Tichenor, 2009).

While some believe that the mass media has a short-term and limited effect on the policy process, others believe it has a strong influence in the areas of agenda setting, priming, and framing (Birkland, 2005; R. Harris & Tichenor, 2009). Arguably, the media may not have a direct influence on the policy making process, but it can have an effect on the actions and attitudes of policymakers and the public (R. Harris & Tichenor, 2009). It can help bring public attention to certain issues and can expand issues to broader audiences, which in turn creates more pressure for change. Interest groups also recognise the value of media and can gain access to it to further promote their case. However, it is not a flawless process. There can be biases in the media coverage, such as taking a particular side in the debate, which can influence policy. A decision on what stories to cover can also influence public opinion. Individual journalists also play a role as they are the ones that write the coverage of the news and events (Birkland, 2005; R. Harris & Tichenor, 2009).

Medical cannabis and the federal-state relations

Over the past decade, state officials and the public have acted on many issues where they felt that the federal government was not taking action or was making unacceptable policy decisions, in policy areas such as education, welfare and drug control (Ferraiolo, 2008; Hall & Degenhardt, 2003; Pickerill & Chen, 2008). In the area

of medical cannabis, state activism took place in the form of initiatives. State direct democracy measures have had an impact on federal-state relations, as cannabis is generally considered to be a policy area of federal concern, and have hence created a conflict between state and federal governments (Ferraiolo, 2008; Hall & Degenhardt, 2003; McDonough, 2000; Pickerill & Chen, 2008). As a result of the conflict, patients, doctors, police, prosecutors, and public officials are placed in a difficult position as they still can be prosecuted at the federal level (Hall & Degenhardt, 2003; McDonough, 2000; MPP, 2013).

The question that this raises is whether states should be able to decide for themselves whether to legalise cannabis for medical use or if the federal government should regulate this area of policy (Pickerill & Chen, 2008). In *Gonzales v. Raich* (2005), the U.S. Supreme Court upheld the Congress' authority under the CSA when it ruled that the Congress has the power to ban the use of medical cannabis even where states approve its use for medicinal purposes. However, the ruling did not deter states in passing medical cannabis laws and widening the gap between federal law and voter preference (Ferraiolo, 2008).

According to Pickerill and Chen (2008), allowing a state to experiment with a policy allows for any potential harm or failures to be localised to that state, and that if a policy works other states may learn from it and choose to adopt it. They also suggested that allowing a state to experiment with a policy may lead to different states trying different ways to approach the issue and assess which approaches are more or less effective (Pickerill & Chen, 2008). In the states that currently have medical cannabis laws, the laws vary in such terms as which debilitating medical conditions cannabis is

allowed for, whether or not they allow dispensaries and whether patients need registry cards (MPP, 2013).

Summary

Overall, it is important to examine all levels of government as each has a significant role to play. The government operates in a complex multi-level system, based not only on the U.S. Constitution, but laws and statutes outside of it. There are many individuals and organisations that have not been included in the Constitution which can influence the political system and how the nation is governed. Most state agencies were created by legislative enactment, rather than by provisions of the state constitutions. Because the U.S. is a democratic system where the supreme power is vested in the people, its aim is to allow all citizens to have an equal say in decisions affecting them. However, there are other factors and informal structures which can play a role in the political system, one of them being scientific evidence. The following chapter will discuss cannabis as a medicine and provide a review of relevant medical cannabis literature.

Chapter 3- Cannabis as a Medicine: A Review of the Literature

Cannabis has long been recognised for its medicinal properties and is the third most commonly used psychoactive substance after tobacco and alcohol in America (Baker, Pryce, Giovannoni, & Thompson, 2003; Eddy, 2010; Kreit, 2003; Marshall, 2005; Russo, 2007). For the purposes of this thesis, cannabis will be the term applied to all products derived from the plant *Cannabis sativa*, which has over 400 compounds (IOM, 1999; McPartland & Russo, 2001; Ryder et al., 2006). Cannabis is made up of Phytocannabinoids, Terpenoids, and Flavonoids (McPartland & Russo, 2001). Phytocannabinoids (cannabinoids) are a group of compounds uniquely produced by cannabis and over seventy different cannabinoids have been identified (McPartland, 2008; McPartland & Russo, 2001).

THC is the main psychoactive ingredient in the cannabis plant (Baker et al., 2003; Ben Amar, 2006; IOM, 1999; Russo, 2007; Ryder, et al., 2006). THC was first isolated, synthesised and stereochemically defined in the 1960s (Baker et al., 2003). It is estimated that over the past decade the THC content increased from 1-3 percent to 6-13 percent and above, with an average of 7 percent THC content in the U.S. (Baker et al., 2003; Russo, 2007). Cannabidiol (CBD), a non-psychoactive compound, is cannabis' major constituent. It is believed to have medicinal properties and reduces THC's side-effects (Mather, 2005; McPartland & Russo, 2001). Cannabinoids bind to specific receptors of which two have been identified, the CB1 and CB2 receptors. CB1 receptors are mainly found in the brain and both male and female reproductive systems (American College of Physicians [ACP], 2008; Ben Amar, 2006; McPartland, 2008; Robson, 2001). These receptors mediate most of the central nervous system responses to cannabinoids and are believed responsible for cannabis' euphoric effects. CB2 receptors

are found mostly in the peripheral nervous system and are believed to be responsible for cannabis' anti-inflammatory and immunosuppressive effects (AMA, 2009; McPartland, 2008; Robson, 2001). Several endogenous fatty-acid ligands (atoms or molecules that bind to another), known as endocannabinoids, have also been found (Baker et al., 2003). These compounds have cannabinoid receptor binding activity, but their physiological roles are not yet known.

Marijuana, hashish, charas, bhang, ganja and sinsemilla are the terms used for different cannabis preparations, the effects of which vary with different delivery methods (IOM, 1999; Julien, Advokat, & Comarty, 2008; Russo, 2007). Bhang and marijuana are low-grade preparations taken from the dried mixture of cannabis flowers, leaves, and stems. Ganja and sinsemilla are the seedless unfertilised female flowering tops. Charas and hashish are the most potent cannabis preparations and are derived from cannabis resin (Julien, et al., 2008; Russo, 2007). Studies have shown that there are also different strains of cannabis which can have various effects (Russo, 2007).

There are different ways of administering cannabis, with each method having advantages and disadvantages. Route of cannabis administration can affect the therapeutic benefits experienced by some patients (Clark, 2000; Grotenhermen, 2001). The following section will discuss different routes of cannabis administration and the use of synthetic cannabinoids in the U.S.

Synthetic Cannabinoids

What is often forgotten in the debate on medical cannabis is that there are currently two synthetic cannabinoids approved in the U.S., dronabinol (Marinol) and nabilone (Cesamet). Dronabinol is approved by the FDA for oral administration as an

appetite stimulant for HIV/AIDS-related wasting syndrome, along with relief of nausea and vomiting (Beal et al., 1997; Hazekamp & Grotenhermen, 2010; Werner, 2001).

Nabilone is also approved by the FDA and is used primarily to treat nausea and vomiting resulting from cancer chemotherapy, when other medications have proven ineffective (National Library of Medicine, 2012). Evidence has shown that these compounds have medical use and they have passed the strict requirements of the FDA for approval as medicines for human consumption (Iversen, 2000). Research is also being done on other synthetic cannabinoids, such as CT-3, a synthetic derivative of a non-psychoactive THC metabolite called THC-11-oic acid, to determine their effectiveness in the treatment of some debilitating medical conditions.

However, despite dronabinol's positive effects, reports indicate that patients prefer smoked cannabis to dronabinol (Earleywine, 2002). The drug is reported difficult to swallow by patients with nausea and vomiting, and due to its oral administration the effects do not appear rapidly. Many patients claim that dosage is easier to regulate with smoked cannabis than with dronabinol. Dronabinol (Marinol in the U.S.) is also expensive, with patients paying up to \$1,000 per bottle of 60 capsules (Earleywine, 2002; Gieringer, Rosenthal, & Carter, 2008).

Route of Administration

Smoking. Smoking is the most popular method of cannabis administration for recreational use and one of the most direct methods of ingestion (Gieringer et al., 2008; Iversen, 2000). Smoking cannabis rapidly delivers THC to the brain, making it easier for patients using the drug for medicinal purposes to control dosage and alleviate symptoms (Degenhardt, Hall, & Lynskey, 2003; Mack & Joy, 2000). Maximum THC concentration is reached within approximately five minutes and THC can be detected in

plasma seconds after first inhalation. Psychoactive effects are felt within seconds to minutes, reaching their maximum after 30 minutes, and last approximately two to three hours (Degenhardt, et al., 2003). A major disadvantage of smoked cannabis is that some chemicals found in cannabis smoke can be toxic and damaging to the respiratory tract (Gieringer et al., 2008). The frequency and amount of cannabis smoked by an average individual may differ in comparison to tobacco, but smoked cannabis contains the same harmful toxins present in tobacco smoke, with greater concentrations of carcinogenic substances (Clark, 2000; Robson, 2001). While some reports have claimed that smoking is a relatively ineffective route of administration because it destroys up to 70 percent of THC, most have found smoking to be a more efficient mode of administration (Mack & Joy, 2000; Russo, 2007).

Vaporisation. The use of inhalation devices, such as vaporizers, has been suggested as an alternative to smoking cannabis as they allow inhalation of cannabis without the negative health effects of smoking (ACP, 2008; Grotenhermen, 2001). Vaporisation offers the same rapid delivery of THC and other cannabinoids as smoking, but may require more getting used to than smoking cannabis. Vaporisers may be bought commercially or the users can make their own (Gieringer et al., 2008). Vaporisers require the use of a hot plate to heat cannabis to the point where cannabinoids vaporise and users can then inhale the vapour (Earleywine, 2002). The disadvantage of using a vaporiser is that the vapour usually contains a low amount of THC and a high amount of cannabinol (Earleywine, 2002).

Eating/drinking. THC is soluble in fats and alcohol so it can be extracted and added to various food and drinks and administered in that way (Iversen, 2000). Absorption occurs through the walls of the stomach and intestines and therefore gives a

much slower absorption and avoids the irritating effects of inhaled smoke. The effects of cannabis administered this way take longer to manifest than smoking, usually one to two hours, and peak more slowly, but the effects can last three up to four hours. Cannabis can also be mixed with alcohol and the tincture made into tea. This route of administration is considered unreliable as the dosage is difficult to titrate due to delayed onset of effects (ACP, 2008; Robson, 2001).

Capsules. Taking THC by mouth in capsule form is not very reliable as a method of delivering a consistent dose of the drug (Iversen, 2000). While THC is absorbed reasonably well from the gut, the process is slow and unpredictable and most of the absorbed drug is rapidly degraded by metabolism in the liver before it even reaches the general blood circulation. The peak blood levels of THC occur anywhere between one and four hours after ingestion and the overall delivery of active THC to the bloodstream averages less than 10 percent. The effects of oral administration can be affected by the acid in the stomach and gut and the presence or absence of food (ACP, 2008; Grotenhermen, 2001). Orally-administered products have not proved consistently effective in their medical application as THC may be erratically or slowly absorbed into the bloodstream and patients suffering from nausea and vomiting have found it difficult to keep oral cannabinoids in their system long enough for the effects to be felt (Clark, 2000). Difficulty in regulating dosage can result in a possible over-dosage or under-dosage (Grotenhermen, 2001; Julien, et al., 2008).

Suppositories. Another way of delivering the drug is in the form of rectal suppositories, where THC can be converted to a hemisuccinate (Julien, et al., 2008). Absorption can be good by this mode of administration, as it delivers the drug directly into the systemic circulation, bypassing the liver, and avoids the problem of liver

metabolism, which limits oral THC absorption. This mode of administration can deliver approximately twice as much active drug to the bloodstream as the oral route, although there can still be variability in drug absorption amongst individuals (Julien, et al., 2008).

Spray. A new spray based on natural cannabis extracts has been developed in the United Kingdom (Gieringer et al., 2008). The oral spray, known as Sativex, consists of equal parts THC and CBD extracted from cannabis and is administered under the tongue, from where it is absorbed into the bloodstream. Sativex differs from Marinol in that it is a mixture of compounds derived from the Cannabis plant; incorporates CBD and other plant ingredients as well as THC. Its absorption is not as fast as inhalation as it takes several minutes for the cannabinoids to be absorbed through the membrane of the mouth, but it is faster than oral ingestion (Gieringer et al., 2008). The spray delivers a more consistent dosage because the cannabinoids are absorbed directly into the blood without having to pass through the digestive system. Sativex is not currently approved for use in the U.S.

Topical. Topical cannabis preparations have been used as folk medicine in India and Latin America (Gieringer et al., 2008; Mack & Joy, 2000). Cannabis can be applied topically to the skin in the form of ointments, lotions, or poultices, for treatment of such conditions as swollen joints and skin inflammation (Gieringer et al., 2008). However, research is unclear on whether there is an effective method for transporting THC or other cannabinoids through the skin. Suppositories are thought to be a better way of delivering cannabinoids to the system and there is no commercially available topical cannabis treatment.

Intravenous. Cannabis is very difficult to administer intravenously as THC is extremely insoluble in water. Cannabis can be injected by adding an alcoholic solution of THC to a rapid intravenous infusion of saline solution, but this is rarely used (Iversen, 2000). The method delivers THC to the blood circulation rapidly. This mode of administration is very rare (Earleywine, 2002).

Anecdotal and clinical reports have suggested cannabis could potentially be effective in the treatment of various debilitating medical conditions (Mack & Joy, 2000; Mather, 2005). The following section will review clinical trials of cannabis and cannabinoids in the treatment of various medical conditions and compare the results with conclusions reached in other influential earlier reviews of the literature. It is important to note that the first section does not follow standards set for systematic literature reviews, but the findings of systematic reviews and meta-analyses on medical cannabis will be discussed later in the chapter. Additionally, this review only included studies of cannabis plant and its natural derivatives and excluded studies that focused on synthetic cannabinoids such as nabilone and dronabinol. Synthetic cannabinoids nabilone and dronabinol are already approved by the FDA for use in the treatment of some debilitating medical conditions, and were excluded because the focus of the research in this thesis was on laws as they relate to medical cannabis, and research on synthetic cannabinoids was deemed beyond the remit of this study.

Review Strategy

For the purpose of this review, an electronic search was made in the OneSearch program of Edith Cowan University (ECU) library system of all literature published until February 2011. The search included the following keywords: “cannabis”, “cannabinoids”, “marijuana”, “marihuana”, “THC”, “tetrahydrocannabinol”, “medical”,

“medicinal”, and “therapeutic”; or a combination of these keywords. Only full-text articles in peer-reviewed journals, obtained either online or through ECU or other university libraries, were included in the search. Other reports were identified through a general internet search of medical and scientific journal websites, pages devoted to medical cannabis, and Google Scholar. Additional reports were also identified from the reference lists of retrieved articles and reports. It is important to note that some studies were not accessed and included in this review because they could not be accessed through the standard university system. The search only included articles in English or with an English translation. Data from review articles, case reports, and where abstracts only were available were not included.

Inclusion criteria. The method for assessing the quality of a clinical trial and the inclusion criteria were as described by the Jadad Scale (Jadad et al., 1996). The Jadad Scale assesses the methodological quality of studies by the presence of three key features: randomization; double-blinding; and accounting for all patients, including withdrawals and dropouts. Studies were included if they met these three key criteria, or had a score point of three or more on a five-point scale (Jadad, et al., 1996). One point is given to a study for each of the following points: randomisation, use of appropriate randomisation procedures, double-blinding, use of appropriate double-blinding methods, and a description of reasons for patient withdrawals and dropouts. Some critics suggest that the scale may be limiting in focusing only on three key criteria, and may not provide the most comprehensive measure (Armijo Olivo et al., 2008). It also does not allow for the studies to be divided into “low” and “high” quality. For the purpose of this research, the Jadad Scale was chosen for its ease of use and its known reliability and external validity (Armijo Olivo, et al., 2008). The scale was also chosen

because it assesses measures of internal validity and accounts for methodological errors such as the placebo effect, which can affect the results (Jadad, et al., 1996). It should be noted that the scale was not used only to exclude studies but to identify common methodological weaknesses, and raise questions that need to be addressed in medical cannabis research.

Level of evidence. All of the studies included in this review are considered to be Level II evidence, according to the National Health and Medical Research Council guidelines (National Health and Medical Research Council, 1999). The levels evaluate the degree to which bias has been eliminated by study design; Level II grading encompasses evidence “obtained from at least one properly designed randomised controlled trial” (National Health and Medical Research Council, 1999, p. 8).

Review Summary

The following section will discuss the scientific evidence from clinical studies on the effectiveness of medical cannabis, as determined by the previously mentioned selection criteria. In total, 38 studies fitting the selection criteria have been identified. As can be seen in Table 1, this review identified 10 conditions in which studies fitting the selection criteria were conducted. While no study specifically examined the effect of medical cannabis on sleep, cannabis’ sleep-inducing properties and effects on quality of sleep have been mentioned in a number of studies discussed in this review. For each study reviewed, methodology, route of cannabis administration, treatment and control groups, the number of participants, drop-out rates, outcome measures, and results will be described. A summary of the results for each debilitating medical condition will also be provided.

Table 1
A Summary of Studies Reviewed

Medical Condition	Number of Studies	Range of study participants	Total number of participants
Pain	16	10-177	794
Nausea and vomiting	7	9-214	474
Spasticity	6	13-630	1, 073
Appetite/Weight	2	67-243	310
Gilles de la Tourette syndrome	2	12-24	36
Parkinson's disease	1	19	19
Epilepsy	1	15	15
Glaucoma	1	6	6
Bladder dysfunction	1	135	135
Schizophrenic psychosis	1	13	13
Sleep*	Mentioned in other studies		
TOTAL	38		2,875

Pain

A total of 16 randomised controlled clinical trials examining cannabis and its constituents in the treatment of pain met the inclusion criteria for this review (Abrams et al., 2007; Berman, Symonds, & Birch, 2004; Blake, Robson, Ho, Jubb, & McCabe, 2006; Conte et al., 2009; Ellis et al., 2008; Johnson, Burnell-Nugent, Lossignol, Ganae-Motan, & Fallon, 2010; Notcutt et al., 2004; Noyes, Brunk, Avery, & Canter, 1975; Nurmikko et al., 2007; Raft, Gregg, Ghia, & Harris, 1977; Rog, Nurmikko, Friede, & Young, 2005; Selvarajah, Gandhi, Emery, & Tesfaye, 2010; Wade, Robson, House, Makela, & Aram, 2003; Wallace et al., 2007; Ware et al., 2010; Wilsey et al., 2008). The four different forms of pain covered include: neuropathic or chronic pain, acute pain, chronic cancer pain, and rheumatic pain.

Table 2
(Chronic) Neuropathic Pain

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Abrams et al. (2007)	Randomised placebo-controlled trial	Smoked cannabis (3.56% THC)	54 patients with HIV-associated neuropathic pain. 50 (93%) patients completed the trial. 25 in each group.	27 randomly assigned to receive a cannabis cigarette. 27 to receive an identical placebo cigarette, three times daily for 5 days	Ratings of chronic pain, percentage achieving >30% reduction in pain intensity, side effects	Cannabis smoking reduced neuropathic pain significantly more than placebo (34% reduction to 17% respectively). Twelve (48%) of patients who smoked cannabis reported a reduction in pain of more than 30% from baseline to end of treatment, compared to 6 (24%) of placebo receiving patients.	Cannabis side effects ratings were significantly higher than those of placebo for anxiety, sedation, disorientation, confusion, and dizziness. No patient withdrew from the study due to side effects.
Ellis et al. (2008)	Phase II, double-blind, placebo-controlled, crossover trial	Smoked cannabis (1-8% THC)	34 HIV-infected patients. 28 (82%)	Patients were administered either smoked cannabis or an identical looking placebo cigarette 4x	Measures of multiple pain (such as analgesia) and side effects	Smoked cannabis significantly reduced neuropathic pain	The frequency of some side-effects, including concentration difficulties, fatigue,

			<i>patients completed treatment (13 placebo-cannabis, 15 cannabis-placebo)</i>	daily over 5 consecutive days. 34 patients were randomised (16 received placebo first followed by cannabis, 18 received the reverse order).		intensity in HIV-infected patients compared to placebo and when taken in combination with an analgesic medication. 30% more patients achieved pain reduction from cannabis (0.46) than for placebo (0.18).	sleepiness or sedation, increased duration of sleep, dry mouth, and thirst was greater for cannabis than placebo
Wilsey et al. (2008)	Randomised, placebo-controlled, crossover trial	Smoked cannabis; high-dose (7% THC), low-dose (3.5% THC)	38 patients with neuropathic pain. <i>32 (84%) patients completed all three study sessions.</i>	During three 6-hour experimental sessions, 38 patients were randomised to receive a high-dose cannabis cigarette, low-dose cannabis cigarette, and a placebo cigarette (cannabinoids extracted) once in random order.	Pain intensity, pain unpleasantness, neurocognitive effects, and psychoactive side effects	Both low and high THC concentrations produced statistically significant analgesic effects compared with placebo. The difference between high and low dose cannabis cigarettes was not statistically significant. Pain was more tolerable at	Subjects using the higher THC dose experienced significantly greater side effects than those using a lower dose or placebo. Feeling “high” and feeling “stoned” scored significantly greater for the high-dose group; both dose groups significantly differed from placebo. Feeling “impaired”, sedation, and confusion were significantly different

						higher cumulative doses of cannabis than with placebo.	between the two dose groups compared with placebo.
Ware et al. (2010)	Randomised, double-blind, placebo-controlled, crossover trial	Smoked cannabis (2.5%, 6%, and 9.4% THC).	23 patients with chronic neuropathic pain. <i>21 patients (91%) completed all four treatment cycles</i>	Patients randomly assigned to groups receiving different cannabis potencies, over four 14-day periods.	Daily average pain intensity, effects on mood, sleep and quality of life, side effects.	High potency cannabis (9.4% THC) significantly reduced average pain intensity compared with placebo; increasing THC content led to improvement in outcomes. <i>At the end of the trial, 16 (76%) participants were able to correctly identify the 9.4% THC treatment, and 13 (62%) were able to identify the placebo period. The 6% THC period was identified by 8 (38%) participants, and the 2.5% THC</i>	No serious side effects. Participants using 9.4% THC reported significantly more drowsiness. Side effects increased with cannabis potency. The most frequent side effects reported by patients receiving 9.4% THC included headache, dry eyes, burning sensation, and cough.

						<i>period by 7 (33%) participants.</i>	
Wade et al. (2003)	Randomised, double-blind, crossover, placebo-controlled study	Cannabis based medicinal extract THC (2.5mg): CBD (2.5mg)	24 patients with neurogenic symptoms unresponsive to standard treatment <i>20 (83%) patients completed the study (3 withdrew during open-label, 1 during the blinded phase).</i>	An open label period during which patients received a 1:1 combination of THC (2.5 mg) and CBD (2.5 mg) was followed by an 8-week double-blind phase, consisting of four 2-week stages during which patients were randomised to receive either cannabis extract containing THC (2.5 mg) only, CBD only (2.5 mg), a combination of both, or matched placebo. Treatments were self-administered by sublingual spray in doses of 2.5-120 mg per day.	Symptoms, well-being, and intoxication scores were recorded on a Visual Analogue Scale. Severity and frequency of symptoms, measures of disability, mood and cognition, side effects	In comparison with placebo, both THC and CBD alone significantly improved pain. Levels of intoxication were highest with THC	Side effects were reported by patients in all groups: 11 (55%) following THC, 10 (48%) following placebo, seven (33%) following CBD, and six (30%) following THC:CBD
Berman et al. (2004)	Randomised, double-blind, placebo-controlled	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	48 patients with central neuropathic pain	Over three 2-week treatment periods, patients were randomised to 6	Pain severity score, followed by pain related quality of life	Both THC alone and Sativex reached statistical	Dizziness, somnolence, a bad taste in the mouth, nausea and feeling

	trial		45 (94%) patients completed the study	sequences of receiving Sativex (1:1 ratio of 2.7 mg THC, 2.5 mg CBD), a THC extract (2.7 mg), and placebo, in sublingual spray. * All patients remained on their existing medications.	and treatment side effects	significance in decreased pain compared with placebo, but did not reach the pre-determined level for clinical significance. *The researchers found it was difficult to guarantee full blinding because many patients had previous experience with cannabis	drunk were the most commonly reported side effects. They were generally well tolerated
Nurmikko et al. (2007)	Randomised, double-blind, placebo- controlled clinical trial	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	125 patients with neuropathic pain of peripheral origin 105 (84%) patients completed the study.	In the 5-week study, patients were randomised to receive either oromucosal Sativex (63 patients) or a placebo (62) identical in appearance, smell, and taste. Doses were self-titrated by patients in order to optimise drug administration. * Patients remained	Change from baseline of mean intensity of global neuropathic pain, allodynia, sleep disturbance, Pain Disability Index, general health, cognitive decline, side effects	Reduction in pain from baseline was statistically significant for Sativex (reduced by 22%) compared with placebo (8%). Improvement in pain intensity, allodynia, pain disability, and impression of change, were	Side effects were reported by 57 (91%) of patients in the Sativex group, compared with 48 (77%) patients in the placebo group. The most common side- effects of Sativex were dizziness (29%), nausea (22%), fatigue (21%), and dry mouth (17.5%)

				<i>on their existing analgesic treatment throughout the study.</i>		also significantly greater for Sativex than placebo.	
Selvarajah et al. (2010)	Randomised, placebo-controlled, double-blind, clinical trial	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	30 patients with painful diabetic neuropathy 24 (80%) patients completed the study.	Patients received daily doses of Sativex or placebo in a sublingual spray, up to 4 times a day. Doses were self-titrated by patients over 2 weeks, followed by a 10-week maintenance phase. * Patients continued using their existing neuropathic pain treatment.	Change in mean daily pain scores, quality of life, side-effects	An improvement in pain scores was observed in both groups. The difference between groups was not statistically significant. 53% of Sativex-treated patients responded to treatment, compared with 64% of placebo-treated participants.	Six patients withdrew from the study due to side effects, but side effects were not outlined by the authors
Rog et al. (2005)	Randomised, double-blind, placebo-controlled, parallel-group trial	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	66 patients with central pain associated with multiple sclerosis 64 (97%) participants completed the study	Over the course of 5 weeks, patients were randomised to receive either Sativex (34) or a placebo (32) identical in appearance, smell, and taste to Sativex. Treatments were delivered via	Change in Neuropathic Pain Scale and an 11-point Numerical Rating Scale scores from baseline to end of treatment, side effects	Reduction in pain scores on both Numerical Rating Scale -11 and Neuropathic Pain Scale was statistically significant for Sativex in comparison with placebo.	30 patients (88.2%) receiving Sativex experienced at least 1 side effect; 22 (68.8%) receiving placebo. Most common Sativex side-effects were: dizziness (56%), dry mouth (12%), drowsiness (9%),

				<p>oromucosal spray; doses were titrated. <i>* Patients continued using their existing neuropathic pain treatment.</i></p>			<p>dissociation (9%), nausea (9%), falls (9%), and weakness (9%)</p>
<p>Notcutt et al. (2004)</p>	<p>Randomised, double-blind, placebo-controlled, crossover trial</p>	<p>Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)</p>	<p>34 patients with chronic pain 32 (94%) patients completed the study</p>	<p>Used 'N of 1' methodology (objectively and systematically evaluating participants' individual responses to treatment). Patients randomly received a different treatment each week over two 4-week sessions: THC, CBD, a combination of both (1:1), and a placebo. Titration was conducted under supervision at the start of each week. <i>* Patients continued using their existing neuropathic pain treatment.</i></p>	<p>Effects, tolerability, safety, and dosages</p>	<p>Both THC alone and the THC: CBD combination was significantly better than placebo in providing pain relief, while CBD alone was ineffective. Out of the 28 patients who obtained benefit, most preferred either THC alone or the THC: CBD combination. <i>* 7 frequent cannabis users were offered THC: CBD as rescue medication</i></p>	<p>Data on side effects during the baseline period was incomplete due to an error in data collection. Side effects were common and most frequently included dry mouth, drowsiness, dysphoria/euphoria, and dizziness</p>

Table 3
Acute Pain

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Wallace et al. (2007)	Randomised, double-blind, placebo-controlled, crossover trial	Smoked cannabis (2%, 4%, and 8% THC)	19 healthy volunteers <i>15 (79%) participants completed the study</i>	Over 4 dose-randomised sessions, participants received 1 of 3 doses of cannabis or a placebo identical in appearance while being exposed to capsaicin-induced pain.	Pain, hyperalgesia, THC plasma levels, and side effects	Cannabis' effectiveness as an analgesic was dose-dependent. Low dose of smoked cannabis (2% THC) had no analgesic effects; a medium cannabis dose (4% THC) resulted in delayed pain relief,	Mainly experienced with high doses of cannabis and included: dizziness/faintness, drowsiness, feeling cold, cognitive impairment, shortness of breath, and dry mouth. An increase in heart rate was experienced at all cannabis doses.

						significantly inhibiting capsaicin-induced pain at 45 minutes after drug exposure; high cannabis dose (8% THC) produced an increase in pain at 45 minutes.	
Raft et al. (1977)	Randomised, double-blind, placebo-controlled, crossover trial	Intravenous THC (0.022 mg/kg and 0.044 mg/kg)	10 healthy male volunteers undergoing dental extractions <i>9 (90%) participants completed the study</i>	2 intravenous doses of THC were compared with intravenous diazepam (0.157 mg/kg) and placebo. Participants were subjected to both a surgical experience and an experimental noxious stimulus. Each subject participated in 4 separate trials where a single molar (4 molars/patient) was removed following 1 of the 4 intravenous treatments (administered on a random basis).	Pain, side effects, treatment preference	Statistically significant increase in pain detection thresholds observed with diazepam and both THC doses (THC's effectiveness attributed to a disruption of the normal sensory signals rather than an analgesic effect). No evidence of analgesic effects on pain tolerance threshold for any of the treatment groups. Higher dose of THC was least preferred by participants; it was	Lower dose THC reportedly produced euphoria/dysphoria, while higher THC dose produced anxiety

						associated with most pain. Diazepam was associated with least pain. Lower dose of THC was preferred over placebo, and described by patients as good or excellent.	
Conte et al. (2009)	Randomised, double-blind, placebo-controlled, crossover trial	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	18 patients with multiple sclerosis <i>17 (94%) patients completed the study</i>	Over 8 weeks, the right tibial nerve was stimulated with bipolar electrical stimuli to measure whether cannabinoids can regulate the nociceptive system (which produces pain). Patients were randomly assigned to 2 groups of 9 to receive Sativex-placebo or placebo-Sativex sequence for 6 weeks, with a 2-week washout period after the 3rd week. Patients self-titrated their daily doses up to a total of 48	Changes in RIII reflex variables, subjective quality and intensity of pain (Visual Analogue Scale), spasticity (Ashworth scale), side effects	A significant effect was observed on the pain threshold and reflex activity in favour of Sativex. The pain rating scores on the 10-point Visual Analogue Scale also decreased in patients using Sativex, but the difference between groups was not significant. The authors concluded that Sativex showed promise in modulating pain processing and may be useful in analgesic therapy	None of the participants experienced major side effects. Most frequent Sativex side effects were slower thinking (11 patients), dizziness and vertigo (8), and fatigue (6). Most frequent placebo-related side effects were fatigue (3) and headache (3)

				sprays/day.			
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Table 4
Pain (Other)

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Chronic Cancer Pain							
Noyes et al. (1975)	Randomised, double-blind, crossover, placebo-controlled trial	Oral THC	36 patients with cancer pain 34 (94%) patients completed the study	Placebo, THC (10 and 20 mg), and codeine (60 and 120 mg) were administered randomly on successive days (single oral dose), and were all identical in appearance. All patients received	Severity of pain/pain ratings, extent of relief, and side effects	Significant differences in pain reduction and relief scores were observed between placebo and 20 mg THC, and between placebo and 120 mg codeine. Lower doses of THC (10 mg) and codeine (60 mg) did not achieve statistical differences when	Heavy sedation was reported by patients receiving high dose THC, and drowsiness was reported by those on a lower dose

				their usual analgesic medication, and varying doses of oral codeine (60 mg, 120 mg) and oral THC (10 mg, 20 mg capsules)		compared to placebo. 6 patients (18%) reported substantial pain relief after placebo; 8 (24%) after 60 mg codeine; 13 (38%) after 10 mg THC, 16 (47%) after 120 mg codeine and 16 (47%) after 20 mg THC	
Johnson et al. (2010)	Multicenter, double-blind, randomised, placebo-controlled, parallel-group study	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD) and Tetranabinex (THC-only extract)	177 patients with cancer pain who did not get sufficient relief from analgesic medication <i>144 (81%) patients completed the study</i>	In the 2-week study, patients were randomised to receive either Sativex (60 patients), Tetranabinex (58), or placebo (59) using a pump action oromucosal spray. Each Sativex spray delivered a dose containing 2.7 mg THC and 2.5 mg CBD, while each Tetranabinex spray delivered 2.7 mg of THC;	The Numerical Rating Scale pain severity score, use of opioid background medication, sleep quality, nausea, memory, concentration, appetite, side effects	Pain was significantly reduced with the THC: CBD extract compared with placebo, but not with the THC extract. Approximately twice the number of patients achieved a greater improvement in pain with the THC: CBD (43%) combination, than those in the THC (23%) and placebo (21%) groups.	106 patients (60%) reported experiencing side effects. Most commonly reported side effects of Sativex included drowsiness (13%), dizziness (12%), and nausea (10%). Most commonly reported side effects of the THC extract were drowsiness

				patients self-titrated to their optimal dose.			(14%), dizziness (12%) and raised gamma GT (a measure of liver dysfunction) (9%)
Rheumatic Pain							
Blake et al. (2006)	Randomised, double-blind, placebo-controlled, parallel-group study	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	58 patients with arthritis not adequately controlled by other medication <i>54 (93%) patients completed the study</i>	In the 5-week study, 31 participants were randomly assigned to receive Sativex by an oromucosal spray (each spray delivered 2.7 mg THC and 2.5 mg CBD) and 27 to receive placebo. Dosing was titrated to a maximum of 6 sprays per day	Pain on movement, pain at rest, morning stiffness, sleep quality, and disease activity	Sativex produced a statistically significant improvement in pain on movement, pain at rest, and pain at present, compared to placebo.	Most frequently reported side effects of Sativex included dizziness (26%), dry mouth (13%), light-headedness (10%), nausea (6%), and fall (6%). Palpitations (7%) and vomiting (7%) were the most commonly reported side effects of placebo.

The largest number of studies included in this review examined cannabis' analgesic properties; 10 studies addressed chronic neuropathic pain, three focused on acute pain, and three on other pain types. The number of participants in the studies ranged from 10-177, with a total of 794 participants. All included studies had a participant retention rate greater than 75 percent. Most of the studies examined the effects of Sativex (cannabinoid oromucosal mouth spray) and smoked cannabis. Other variations of what here is termed cannabis included cannabis based extract, tetranabinex (THC-only extract), intravenous THC and oral THC.

In terms of chronic neuropathic pain, nine out of 10 studies found significant results favouring cannabis and its components: smoked cannabis (4 out of 4 studies (4/4)), cannabis-based medicinal extract (1/1), and Sativex (4/5) (Abrams, et al., 2007; Berman, et al., 2004; Ellis, et al., 2008; Notcutt, et al., 2004; Nurmikko, et al., 2007; Rog, et al., 2005; Wade, et al., 2003; Ware, et al., 2010; Wilsey, et al., 2008).

All three studies on cannabis' effects on acute pain produced results indicating positive effects of the drug and its different components: smoked cannabis (1/1), intravenous THC (1/1), and Sativex (1/1) (Conte, et al., 2009; Raft, et al., 1977; Wallace, et al., 2007). However, Conte et al. (2009) noted that the difference between groups in pain rating scores on the 10-point Visual Analogue Scale was not significant, Raft et al. (1977) found no evidence of analgesic effects on pain tolerance threshold for any of the treatment groups, and Wallace et al. (2007) found that smoked cannabis' effectiveness as an analgesic was dose-dependent. Lastly, all three studies looking at other types of pain (chronic cancer and rheumatic) yielded significant results in favour of oral THC (1/1, dose dependent) and Sativex (2/2) (Blake, et al., 2006; Johnson, et al., 2010; Noyes, et al., 1975).

A major caveat in the studies of cannabis' therapeutic potential in the treatment of pain is that the data have mainly been collected on small sample sizes of healthy, regular cannabis users, and usually with more male than female participants. Psychoactive effects of cannabis also make blinding difficult; in some studies, such as Ware et al. (2010) subjects were able to correctly identify the treatment they were receiving due to feeling "high". Durability of analgesia is also difficult to access in short-term studies. Therefore, more randomised controlled studies are needed to determine the therapeutic application of cannabis and its constituents, and an optimal delivery system.

Overall, cannabis and its constituents have shown considerable potential in decreasing chronic pain. However, less research has been conducted on its effects in the treatment of acute pain. Generally, studies on cannabis' analgesic properties have had low sample sizes, making them difficult to generalise. They have, however, shown that cannabis has short-term analgesic potential. Cannabis' therapeutic potential in some pain management was no more effective than other drugs. On the other hand, studies such as Blake et al. (2006) have shown that cannabis may reduce pain in patients whose pain was not adequately controlled by other medication. Its effects might also be dose-dependent, especially if used in smoked form.

In acute types of pain cannabis-based medicines did not show significant results. However, the three studies included in this review used different routes of cannabis administration, so it is difficult to reach a conclusion on cannabis' effectiveness in the treatment of acute pain based on the limited number of studies. Larger numbers and a higher degree of homogeneity are necessary in order to be able to comment on the true size of the analgesic effect of cannabis.

Relief of Nausea and Vomiting

Seven randomised, controlled clinical trials examining the effects of cannabis and its constituents on nausea and vomiting met the inclusion criteria for this review (Chang et al., 1981; Chang et al., 1979; Duran et al., 2010; Frytak et al., 1979; Sallan, Cronin, & Zelen, 1980; Sallan, Zinberg, & Frei, 1975; Ungerleider et al., 1982). The studies were grouped by different routes of cannabis administration, and are discussed below.

Table 5
Nausea and Vomiting

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Sallan et al. (1975)	Randomised, double-blind, crossover, placebo-controlled trial	Oral THC (capsules) 15 or 10mg/m ²	20 patients receiving chemotherapy <i>11(55%) patients completed all 3 courses of treatment</i>	Patients received either THC capsule or identical placebo capsule 3 times per day during three 1-day courses; each patient served as their own control. <i>* The study was limited in scope because it did not include a control group treated with a standard antiemetic</i>	Nausea, vomiting, appetite, and side effects	A significant difference between THC and placebo in treating nausea and vomiting was observed; 14 out of 20 (70%) patients reported an antiemetic effect from the THC, while no effect was observed in the placebo group.	13 (81%) patients receiving THC reported feeling “high”; 2 (13%) reported experiencing THC toxicity (e.g. paranoia, fear, panic).
Sallan et al. (1980)	Randomised, double-blind, cross-over trial	Oral THC (capsules) 15 or 10mg/m ²	84 patients receiving chemotherapy <i>57(68%) patients completed the study</i>	Patients received a combination of 2 one-day treatments with oral THC and one with 10 mg prochlorperazine (PCP) (standard antiemetic treatment), OR 2 prochlorperazine and one THC treatment.	Nausea, vomiting, food intake, and feelings of being “high”.	The rate of complete response (no nausea or vomiting) to THC treatment (6 complete responses) was significantly higher than the rate for PCP (1 complete response). 9 patients receiving THC had no response to treatment, and 11 had no response with PCP.	All 6 patients who had a complete response to THC experienced feeling “high”, whereas 2/9 who had no response reported feeling “high”.

						20/25 patients, who were treated with both drugs and who expressed a preference, preferred THC to PCP	
Frytak et al. (1979)	Randomised, double-blind, placebo-controlled, parallel groups trial	Oral THC (capsules) 15mg	116 patients receiving chemotherapy <i>98 (84%) patients completed the study</i>	Patients were randomised to receive oral THC (38 patients), oral prochlorperazine (10mg) (41 patients) or placebo (37 patients). Placebo and PCP were prepared in the same gelatine capsules as THC. First dose was administered 24 hours before chemotherapy, and subsequent doses were given 2 and 8 hours after chemotherapy. On the remaining 3 study days, treatments were given 3x a day.	Nausea, vomiting, appetite, sedation, feelings of “high”, and side effects	On Day 1, a significantly higher percentage of placebo patients experienced nausea and vomiting than patients in other two study groups. The antiemetic effects of oral THC were equivalent to those of PCP, and were more significant than placebo. Seventeen (45%) THC, 18 (44%) PCP and 20 (54%) placebo group participants reported experiencing repeated vomiting. 12 patients considered THC therapy intolerable.	Side effects such as ataxia, hypotension, and visual hallucinations were more frequent and severe with THC (12, 32%) than PCP (1, 2%) and placebo (1, 3%) <i>*18 patients (15.5%) dropped out after Day 1 due to side effects (10 out of THC, 5 PCP, and 3 placebo group)</i>
Ungerleider et al. (1982)	Randomised, double-blind, crossover	Oral THC (capsules) (7.5-12.5 mg)	214 patients receiving chemotherapy	Patients were grouped by two standard	Appetite, food intake, mood,	No significant differences between THC and PCP were	Side effects were reported by 75 (45%) of patients

	design trial		<i>139 (65%) patients completed the study</i>	chemotherapy regimens (98 were randomly assigned to a single-day regimen, 41 to a multiple-day regimen). Prochlorperazine was administered in a fixed dose of 10 mg, while THC was administered in proportion to the body surface area. Both treatments were administered orally 1h before chemotherapy and every 4 hours thereafter, for a total of 4 doses/ day for each day of chemotherapy.	activity, relaxation, interaction, and concentration	observed in antiemetic response and effectiveness; 54 (41%) of evaluable patients experienced less nausea when using THC, compared with 41 (31%) of those using PCP. <i>* 2/3 of patients who completed the study were able to correctly identify the drug they received, and this group did significantly better on THC.</i>	receiving THC, compared to 56 (31%) of those receiving PCP. Frequency of side effects was significantly greater for patients receiving THC than PCP. There were significant drug effects with THC: less ability to concentrate, less social interaction, and less activity.
Chang et al. (1979)	Randomised, double-blind, crossover, placebo-controlled trial	Oral THC (10 mg/m ²) Smoked cannabis (1.93 % THC)* only used as a substitute for oral THC in case of its failure/inadequacy	15 patients with chemotherapy-related nausea and vomiting <i>15 (100%) patients completed the study</i>	During 6 subsequent chemotherapy treatments (3 THC, 3 placebo) each patient served as their own control. Placebo capsules were identical to THC capsules, and	Number of nausea and vomiting episodes, appetite, side-effects, and THC plasma concentrations	THC treatment produced a statistically significant reduction in the number of vomiting and retching episodes, degree of nausea, duration of nausea, and volume of emesis compared	Sedation was reported by 12 (80%) patients, but no participant withdrew from the study

				placebo cigarettes had an identical odour and taste to cannabis cigarettes		to placebo. 14/15 (93%) patients reported a reduction of nausea and vomiting with THC. Nausea and vomiting decreased with elevation of THC plasma concentration. Smoked cannabis was more effective and reliable than oral THC in reaching a higher, therapeutic plasma concentration.	
Chang et al. (1981)	Randomised, double-blind, crossover, placebo-controlled trial	Oral THC (10 mg/m ²) Smoked cannabis (1.93 % THC)* only used as a substitute for oral THC in case of its failure/inadequacy	9 patients receiving chemotherapy <i>8 (89%) were evaluable</i>	Each patient served as his or her control and completed 3 paired trials of either the THC-placebo or placebo-THC sequence. THC or an identical looking placebo were administered 5 times/day. The order of THC and placebo administration was randomised. In case of vomiting, the patient was given a	Number of vomiting and retching episodes, volume of emesis, degree and duration of nausea, feelings of being “high”; and other side effects	Oral or smoked THC did not significantly reduce the number of vomiting or retching episodes, volume of emesis, degree of nausea, or duration of nausea compared to placebo. 3 (38%) patients had a “fair” response to THC in reducing nausea and vomiting; 5(62%) had no response. Drug absorption was observed to be poor and highly variable for all scheduled	Apart from euphoria (75% of patients) and short episodes of tachycardia, no side effects were reported

				cannabis cigarette for the remainder of that trial.		doses.	
Duran et al. (2010)	Pilot, randomised, double-blind, placebo-controlled, phase II clinical trial	Whole-plant cannabis-based medicine (CBM) (oromucosal spray) THC (2.7 mg), cannabidiol (2.5 mg)	16 patients receiving chemotherapy <i>15 (94%) patients completed the study</i>	The CBM was taken in conjunction with standard antiemetic therapies. 7 patients were randomised to receive the CBM in a 120 hour post-chemotherapy period, and nine to receive a placebo.	Response to treatment, frequency and duration of nausea and vomiting, side effects, impact on daily life, satisfaction with treatment	Six (86%) patients in the CBM group and all the patients in the placebo group tolerated dose titration. Complete response to treatment (no nausea) was significantly higher in the CBM group compared with placebo (5, 71% patients in CBM and 2, 22% in placebo group). 4 patients (57%) of patients receiving CBM and 8 (88%) receiving placebo were satisfied with their treatment.	At least one side effect was reported by six (86%) CBM and 6 (67%) placebo receiving participants; somnolence was the most reported

In the seven studies of cannabis' antiemetic properties reviewed here, the number of participants ranged from 9-214, with a total of 586 participants. Four (57%) studies had a participant retention rate greater than 75 percent. The studies examined the effects of oral THC and CBM (cannabis-based medicine). Five out of seven studies produced results indicating positive effects of the drug and its components: oral THC (4/6) and CBM (1/1) (Chang, et al., 1979; Duran, et al., 2010; Frytak, et al., 1979; Sallan, et al., 1980; Sallan, et al., 1975).

Only one study comparing cannabis to other antiemetic drugs found its antiemetic effects to be superior (Sallan, et al., 1980). Two studies found that the antiemetic effects of cannabis and its constituents were similar or equal to those of other antiemetic drugs (Frytak, et al., 1979; Ungerleider, et al., 1982). Side effects occurred more often with cannabinoids than with other antiemetics, but these usually occurred in a small number of patients and disappeared after a short period of time.

It should be noted that only one study reviewed here has been conducted recently, and all others were conducted in the 1970s and 1980s, bringing into question their generalisability and applicability, as it is known that the THC content of cannabis plants has increased in past decades. None of the studies evaluated the effects of smoked cannabis. Comparison of the studies is also made difficult due to variability in a number of areas including participants, dosage, types of chemotherapy and antiemetic drugs administered, and number of patients who withdrew or dropped out. One of the potential explanations for a large number of drop outs is disease progression. Cancer can be a terminal illness, and patients terminating the study early may be attributable to the disease itself. Performing a double-blind trial may also be difficult when using cannabis, due to patients experiencing psychoactive drug effects. Feeling these effects

may enable patients to correctly identify the drug received and perform better on a particular treatment, as was the case with Ungerleider et al. (1982).

Based on the number of studies reviewed here, it is difficult to reach a conclusion on cannabis' anti-emetic properties, especially in terms of smoked cannabis. The overall consensus is that cannabis and its constituents (cannabinoids) are superior to placebo in the treatment of nausea and vomiting in individuals receiving cancer chemotherapy, especially when used together with other antiemetic drugs (Sallan, et al., 1980). However, cannabis and its constituents did not adequately control nausea and vomiting in some patients due to issues with oral administration and the side-effects associated with orally administered drugs, such as difficulty in swallowing and titrating dosage. Smoking is suggested as a better route of administration for individuals experiencing nausea and vomiting or those that have difficulty swallowing or keeping a pill down, but no study included in this review examined the antiemetic effects of smoked cannabis.

Further clinical trials are recommended in order for an effective dosage to be established as well as the most effective route of administration. As studies on the antiemetic properties of cannabis have often been criticised for their sample size, further large-sample human clinical trials comparing the action of cannabinoids with modern antiemetic medication are recommended.

Spasticity

A total of six randomised controlled clinical trials evaluating the effectiveness of cannabis and its constituents in the treatment of spasticity met the inclusion criteria for

this review (Collin, Davies, Mutiboko, Ratcliffe, & Group, 2007; Ungerleider, Andrysiak, Fairbanks, Ellison, & Myers, 1988; Vaney et al., 2004; Wade, Makela, Robson, Houre, & Bateman, 2004; Wade, et al., 2003; Zajicek et al., 2003). Spasticity is a chronic disorder characterised by an abnormal increase in muscle tone and resistance to passive movement (Collin, et al., 2007; Zajicek, et al., 2003). It is a symptom of conditions such as multiple sclerosis (MS) and spinal cord injury.

Table 6
Spasticity

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Ungerleider et al. (1988)	Randomised, double-blind, placebo-controlled, crossover trial	Oral THC (2.5-15mg/day)	13 patients with MS <i>12 (92%) patients completed at least two paired trials</i> <i>5 (38%) completed three paired trials</i>	Patients were divided into 2 dosing groups (depending of the time of their most severe spasticity). One group (2 patients) received their treatment at bedtime and the other group (11 patients) received their treatment 2x/day. Each group was randomised to receive 5 days of oral THC (2.5-15 mg per day) followed by 5 days of placebo, or the reverse sequence. Patients were initiated at varying doses of THC which were later adjusted.	Motor function, limb spasticity, and limb weakness (assessed by physician rating scales); spasticity and side effects (patient rating scales)	Patient rating scales indicated a significant reduction in spasticity for 7.5 mg THC dose compared with placebo; 2.5 and 5 mg doses were deemed ineffective. The results indicated that a reduction in spasticity began at 7.5 mg and continued for most participants at 10 and 15 mg doses. The 7.5 mg THC dose was selected as the highest tolerable dose because 75% of participants who received the 10 mg dose of THC complained of intolerable side effects.	Side effects were frequent with the 7.5 mg THC dose and included dry mouth, weakness, dizziness, relaxation, mental clouding, short-term memory impairment, and spatial-time distortions. <i>* Authors suggested that side effects might have interfered with patient blinding</i>
Zajicek et al. (2003)	Randomised, double-blind,	Cannabis extract (capsules) (2.5mg	630 patients with MS	In the 15-week study, patients were	Change in MS-related	Treatment with cannabinoids was not	A total of 50 (8%) participants (12

	parallel groups, placebo controlled trial	THC: 1.25mg CBD, and less than 5% of other cannabinoids per capsule) Synthetic THC (Marinol, capsules)	<i>611 (97%) participants completed the study</i>	randomised to receive: Marinol capsules 206 patients), cannabis extract capsules (211 patients), or placebo (213 patients). Doses were administered according to bodyweight, with a maximum 25 mg daily. As the researchers were unable to make the active treatments identical, each had its own matched placebo identical in appearance.	spasticity (using the Ashworth scale), mobility, symptoms, disability scale, side effects	found effective in improving MS associated spasticity, as measured by the Ashworth scale. However, a significant reduction in spasticity was reported by patients receiving both synthetic THC (60%) and the cannabis extract (61%). 46% of patients receiving placebo reported an improvement in spasticity.	receiving cannabis extract, 18 receiving Marinol, 20 receiving placebo) reported serious side effects and 558 (89%) patients reported minor side effects; these were generally found to be well tolerated
Vaney et al. (2004)	Randomised, double-blind, placebo-controlled, crossover trial	Cannabis extract (oral) (2.5 mg THC: 0.9 mg CBD per capsule)	57 patients with MS <i>37 (65%) patients completed the study per-protocol</i>	28 patients were randomised to receive cannabis extract capsules for 14 days followed by a placebo identical in shape, taste, and colour; 29 received the reverse sequence. Treatments were administered in 12 capsules daily, with	Change in MS-related spasticity (using the Ashworth scale), spasm frequency and symptoms, Rivermead Mobility index, nine-hole peg test, side effects	While not statistically significant, the active treatment produced favourable results for spasm frequency, mobility, and patients' general condition. Evaluation by the Ashworth scale found no beneficial effects on spasticity unless the analysis was restricted to 37	Cannabis extract was well tolerated and no serious adverse events were reported. However, significantly higher toxicity levels were reported during active treatment compared with placebo. Most frequently reported side effects

				varying proportions of active treatment (15-30 mg of THC per day) and placebo. Patients continued using their current medication.		(65%) patients who took 90% or more of the prescribed dose; then significant improvements in the frequency of spasms were observed.	included dizziness, feeling “high”, and difficulty concentrating
Wade et al. (2003)	Randomised, double-blind, placebo-controlled, crossover trial	<p>Cannabis extract containing THC (2.5mg)</p> <p>Cannabis extract containing CBD (2.5mg)</p> <p>Combination of both THC (2.5mg): CBD (2.5mg)</p> <p>(sublingual spray)</p>	<p>24 participants (18 with MS, 4 with spinal cord injury, 1 with brachial plexus damage)</p> <p><i>20 (83%) patients completed the study</i></p>	Patients were randomly assigned to receive either cannabis extract containing THC: CBD, a combination of THC: CBD, or matching placebo in a sublingual spray four times/day (maximum 120 mg/24 hours) over four 2-week study periods.	Visual Analogue Scale score for target symptoms, wellbeing, and intoxication. Severity and frequency of symptoms (numerical rating scales and standard measures of disability (Barthel Index)).	In comparison with placebo, both CBD and THC extract significantly improved pain. THC extract also significantly improved muscle spasm, spasticity and appetite. THC: CBD significantly improved muscle spasm and sleep. While rescue medication was offered, 12 (50%) patients used zero or negligible amounts of it.	Levels of intoxication were highest with THC. Side effects were reported by patients in all groups: 11 (55%) following THC, 10 (48%) following placebo, 7 (33%) following CBD, and 6 (30%) following THC:CBD
Wade et al. (2004)	Randomised, double-blind, placebo-controlled trial	Sativex (sublingual) (2.7 mg THC; 2.5 mg CBD)	<p>160 patients with MS</p> <p><i>154 (96%) participants completed the study</i></p>	Eighty patients were randomised to receive Sativex administered in sublingual spray at 2.5-120 mg doses	Visual Analogue Scale score for target symptoms, measures of	Primary symptom Visual Analogue Scale scores were compared between groups and indicated that Sativex	Side effects were generally mild and well tolerated. Most frequent side effects experienced by the Sativex group

			<i>study</i>	for a period of six weeks; 80 received placebo. The first dose was supervisor and the rest were titrated by patients at home.	disability, cognition, mood, sleep and fatigue, side effects	significantly decreased spasticity compared to placebo. There was also a significant improvement in patients' assessment of the quality of sleep with Sativex.	included dizziness (26, 33%), application site discomfort (21, 26%), and fatigue (12, 15%). Patients receiving placebo most frequently reported application site discomfort (18, 23%), headache (13, 16%), and dizziness (10, 13%)
Collin et al. (2007)	Randomised, double-blind, placebo-controlled, parallel-group trial	Sativex (sublingual) (2.7 mg THC; 2.5 mg CBD)	189 patients with MS <i>174 (92%) participants completed the study</i>	In the 6-week study, participants were randomised in a 2:1 ratio; 124 to oromucosal Sativex (2.7 mg THC, 2.5 mg CBD), and 65 to an identically flavoured placebo. Titration was performed as required, up to a maximum of 48 sprays per day.	Numerical Rating Scale for the severity of spasticity, the Ashworth scale score of spasticity, and a subjective measure of spasm, side-effects	A statistically significant decrease in spasticity score as evaluated by the Numerical Rating Scale was reported in the Sativex group compared with placebo. Sixty six (57%) participants in the Sativex group reported that their condition improved, compared with 31 (48%) participants receiving placebo.	Side effects were reported by 102 (82%) participants receiving Sativex and 46 (71%) receiving placebo; majority were mild to moderate. Only 6 (4.8%) participants from the Sativex and 2 (3.1%) from the placebo group withdrew due to side effects.

Six studies included in this review examined cannabis' effectiveness in treating spasticity, with a focus on patients with MS. The number of participants in the studies ranged from 13-630, with a total of 1,073 participants. Five (83%) studies had a participant retention rate greater than 75 percent; one of the studies included in the count reported 92% completing at least two paired trials, with 38% completing three. The studies examined the effects of Sativex, THC, CBD, cannabis extract, and oral THC.

Five out of six studies found significant results favouring cannabis and its components: oral THC (1/1), cannabis extract (1/2), THC and combination of THC:CBD (1/1), Sativex (2/2) (Collin, et al., 2007; Ungerleider, et al., 1988; Wade, et al., 2004; Wade, et al., 2003; Zajicek, et al., 2003). The effects of THC were dose dependant, with higher doses producing better results. Conversely, higher THC doses resulted in frequent side effects which led to difficulties in performing patient blinding (Ungerleider, et al., 1988). The side effects, however, were generally well tolerated.

Overall, results from clinical trials are mixed but show that cannabis and its derivatives have the potential to reduce spasticity and objective ratings of spasticity in patients with MS. Results have also indicated that it might be an effective long-term treatment. However, more research is needed to establish the most effective mode of cannabis administration, and whether the therapeutic benefits outweigh the negative side effects associated with the drug. As no comparisons with other anti-spastic drugs have been made in the studies reviewed here, it is not possible to determine whether cannabis and its components are the most effective method of decreasing spasticity and for whom they might be appropriate. Also, most reports in favour of cannabis came from subjective scores rather than objective measurements, therefore future research

should look at determining the most appropriate measurement of the effects of cannabis and its components on spasticity.

Appetite Stimulation/Weight Gain

Two randomised, controlled trials examining the effectiveness of cannabis and its constituents on appetite stimulation met the inclusion criteria for this review (Abrams et al., 2003; Strasser et al., 2006). The studies are described below.

Table 7
Appetite Stimulation/Weight Gain

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Strasser et al. (2006)	Multicentre, phase III, randomised, double-blind, placebo-controlled, parallel trial	Oral THC (2.5 mg) Cannador (an oral whole plant cannabis extract with 2.5 mg THC and 1 mg CBD)	243 patients with cancer-related anorexia-cachexia syndrome <i>164 (67%) patients completed the study</i>	In the 6-week study, patients were assigned to receive either THC (100 participants), Cannador (95 participants), or placebo (48 participants) twice daily.	Appetite, mood, nausea (monitored with a visual analogue scale), quality of life, cannabinoid-related toxicity	No significant differences were observed between the three study arms for appetite or cannabinoid-related toxicity. Increased appetite was reported by 58%, 73%, and 69% of participants receiving THC, Cannador, or placebo, respectively. No differences between treatment arms in body weight at baseline or week 6 (end of treatment) were reported	No significant differences between side effects were observed. The most common side effects include nausea, fatigue, pain, anemia, dizziness, dyspnea, diarrhoea, and obstipation
Abrams et al. (2003)	Randomised, placebo-controlled, 21-day intervention trial	Cannabis (smoked) (3.95% THC) Dronabinol (oral) (2.5mg)	67 HIV-infected patients <i>62 (93%) patients completed the study</i>	Rolled cannabis cigarettes were administered to 21 patients (1 to 3 a day); 25 patients received oral THC; and 21 patients were assigned to the placebo group.	HIV RNA levels, CD4+ and CD8+ cell subsets, pharmacokinetics, change in weight	The primary aim of the study was to assess the effects of cannabinoids on the severity of HIV infection progression, but the results showed that participants in the cannabis and	Side effects were generally well tolerated

				Both oral THC and placebo were administered in a capsule; smoked and oral cannabis were administered on the same schedule. There was no smoked placebo group- the authors did not think they could successfully blind study participants to cannabis given their previous cannabis experience.		dronabinol groups gained significantly more weight than those in the placebo group (an average of 3.0 kg; 3.2 kg; and 1.1 kg respectively). The short-term use of cannabinoids did not adversely affect viral load in individuals with HIV infection	
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While dronabinol (Marinol) is prescribed in the U.S. for the treatment of AIDS-related wasting syndrome, a relatively small number of clinical, randomised, double-blind trials have been conducted to assess its effectiveness. In the two studies included in this review, there were 67 participants in one study and 243 in another, with a total of 310 participants. Only one study had a participant retention rate greater than 75 percent. The studies evaluated the effectiveness of smoked cannabis, oral THC, and Cannador (oral whole plant cannabis extract).

Abrams et al. (2003) compared the effects of dronabinol and smoked cannabis, and found that participants receiving both smoked cannabis and dronabinol gained significantly more weight than those in the placebo group. Treatment related side effects were reported in all studies, but were well tolerated. No long-term study fitting the selection criteria has been identified, possibly due to disease progression and difficulty retaining participants. Strasser et al. (2006) examined the effects of oral THC and Cannador and found no significant differences between oral THC, Cannador and placebo for appetite and no differences between treatment arms in body weight at baseline compared to week 6 (end of treatment) were reported.

Overall, cannabis and its derivatives have shown some potential in stimulating appetite and increasing weight in patients with AIDS or cancer related wasting syndrome. However, the side effects of cannabis constituents need to be considered in comparison to other appetite stimulants, which may prove more or equally beneficial but with less side effects. Cannabis may be useful for individuals for whom other appetite stimulants have proven ineffective, or for those who cannot take other treatments orally. However, limited research prevents any firm conclusions being drawn on the effectiveness of cannabinoids on appetite and more research is needed to evaluate

the long-term effects of cannabis and the effectiveness of different routes of cannabis administration, especially in comparison with other already available treatments.

Other Conditions

Seven studies met the selection criteria for inclusion in this review (Carroll et al., 2004; Cunha et al., 1980; D'Souza et al., 2005; Kavia, DeRidder, Constantinescu, Storr, & Fowler, 2010; M^uller-Vahl et al., 2002; M^uller-Vahl et al., 2003; Tomida et al., 2006). The conditions covered by the studies were Gilles de la Tourette syndrome, Parkinson's disease, epilepsy, glaucoma, bladder dysfunction and Schizophrenic psychosis.

Table 8
Other Conditions

Author	Methodology	Route of Administration	Number of participants	Treatment and Control Groups	Outcome measures	Results	Side Effects
Gilles de la Tourette Syndrome							
Müller-Vahl et al. (2002)	Randomised, double-blind, placebo-controlled, crossover trial	Oral THC (5.0, 7.5, and 10.0 mg)	12 patients with Tourette's syndrome <i>All patients (100%) completed the study</i>	Patients received different doses of oral THC based on their age, sex, and prior use of cannabis. 6 patients were randomly assigned to receive a single dose of THC capsule followed by an identical placebo over 2 days; 6 received treatment in the reverse sequence. After a 4-week washout phase, patients were crossed over to the other treatment sequence	Tic severity (assessed by the Tourette Syndrome Symptom List (self-rating scale) and Shapiro Tourette-Syndrome Scale (examiner ratings)).	Using a self-rating scale, the results showed a significant reduction of motor and vocal tics, and obsessive compulsive behaviour. Examiner ratings showed a significant improvement in subscores in favour of THC; the differences between groups in overall global tic severity scores did not reach statistical significance. 9/12 patients (75%) indicated that THC was a more successful treatment than placebo	Side effects were mild and reported by five (58%) patients receiving THC and two (17%) patients receiving placebo. Higher THC doses of 7.5 and 10.0 mg produced more significant side effects including headache, nausea, ataxia, and anxiety. Researchers suggested that the side-effects were likely to decrease after long-term treatment.
Müller-Vahl et al. (2003)	Randomised, double-blind, placebo-controlled trial	Oral THC (2.5 and 5.0 mg capsules)	24 patients with Tourette's syndrome <i>17 (71%)</i>	In the 6 week study, patients were randomly assigned to receive THC capsules or identical placebo.	Tourette Syndrome CGIS (Clinical Global Impression	A statistically significant difference was observed in favour of THC based on the CGIS scores. Using	Side effects were generally mild and well tolerated; five (42%) patients receiving THC and three (25%)

			<i>participants completed the study</i>	Treatment dosage was titrated to the target of 10.0 mg THC, starting at 2.5 mg per day.	Scale), examiner ratings, self-ratings, and a video-based rating scale	a self-rating scale at 10 treatment days, there was a significant difference between both groups. THC reached efficacy after approximately three weeks of treatment; this efficacy persisted or increased after more than four weeks up to the end of the study	receiving placebo reported mild side effects.
Parkinson's disease							
Carroll et al. (2004)	Randomised, double-blind, placebo-controlled, crossover trial	Cannador (ethanolic cannabis extract) (2.5 mg THC: 1.25 mg CBD per capsule)	19 patients with Parkinson's disease <i>17 (89%) of patients completed the study</i>	Ten patients were randomised to receive Cannador followed by placebo; nine the reverse sequence. The treatment dose was administered based on weight (maximum 0.25 mg/kg of THC). Each treatment phase lasted 4 weeks, with a 2-week washout period.	Effects on Parkinson's disease severity and duration of dyskinesia, adverse effects, and dosing schedules	Results indicated that Cannador had no significant effect on dyskinesia and had no pro- or anti-parkinsonian effects. <i>However, 11 patients (65%) did not attain the target dose on Cannador and 9 (53%) on placebo.</i>	No serious adverse effects were reported. Mild side effects were reported by both groups, but were more common with Cannador (37 reported adverse events) than placebo (15). Main side effects included drowsiness/lethargy, dry mouth, and detachment
Epilepsy							
Cunha et al. (1980)	Randomised, double-blind,	Cannabidiol (CBD) (oral)	15 epileptic patients who	Participants continued using	Absence of convulsive	3 patients receiving CBD showed an	4 patients receiving CBD and 1

	parallel groups, placebo-controlled trial		<p>did not obtain satisfactory results with their prescribed anticonvulsant medication</p> <p><i>12 (80%) patients completed the study</i></p>	<p>their prescribed anticonvulsant medication and were randomly assigned to two groups; one group (7 patients) was administered CBD (200-300 mg daily) and the other (8) placebo in capsule form for up to 4 ½ months. The patients were instructed to take 2 or 3 capsules daily</p> <p><i>*One patient receiving placebo was transferred to the CBD group after one month</i></p>	crises, neurological examination and EEG, clinical and laboratory examinations, clinical evaluation of treatment	<p>improvement in the EEG pattern. 2 patients receiving placebo had an improved EEG pattern on one occasion only. Improvements in clinical evaluation scores were observed in both groups in the 1st week; from the 2nd week all but one placebo patient returned to their previous clinical state. 4 patients receiving CBD remained convulsion free throughout the treatment; 3 showed partial improvement. 1 patient receiving placebo showed an improvement in their condition; 7 showed no improvement.</p>	<p>receiving placebo reported somnolence. 1 CBD patients complained of painful gastric sensations after taking the drug; symptoms disappeared after taking antacid.</p>
Glaucoma							
Tomida et al. (2006)	Randomised, double-blind, placebo-controlled, 4	<p>Oral THC (5 mg)</p> <p>Oral CBD (20 mg or 40 mg)</p>	6 patients with ocular hypertension or early	Patients received a single dose of 5 mg THC, 20 mg CBD, 40 mg CBD,	Intraocular pressure, visual acuity, vital signs,	Results indicated that two hours after administration of 5 mg THC the	Side effects were generally mild and well tolerated. Only one patients

	way crossover trial		primary angle glaucoma <i>All patients (100%) completed the study</i>	or placebo.	psychotropic effects	intraocular pressure was significantly lower than after placebo, returning to baseline levels after four hours. No significant therapeutic effects were observed with either of the CBD doses. In contrast, the 40 mg dose of CBD led to an increase of intraocular pressure at four hours after administration.	experienced a panic like reaction after receiving THC
Bladder dysfunction							
Kavia et al. (2010)	Randomised, double-blind, placebo controlled, parallel-group trial	Sativex (sublingual) (2.7 mg THC: 2.5 mg CBD)	135 patients with MS <i>118 (87%) patients completed the study</i> <i>*86 (64%) patients were included in per-protocol analysis of efficacy</i>	In the 10-week trial, 67 patients were randomised to receive oromucosal Sativex and 68 to receive placebo. Patients self-titrated to their optimal dose (maximum 48 sprays per day).	Daily number of urinary incontinence episodes, incidence and urgency of nocturia, bladder condition, quality of life, and patient's impression of change	Sativex marginally reduced the daily number of urinary incontinence episodes compared to placebo, but statistical significance was not reached. A statistical difference was reached in the decrease of number of episodes of nocturia, number of voids per day, patient impression of change, and	Sativex-related side effects were generally mild or moderate. Main Sativex side effects were dizziness (12%), headache (6%), vomiting (6%), disorientation (6%), and dissociation (6%). Dizziness (6%) and urinary tract infection (6%) were the main placebo-related side effects

						overall bladder condition.	
Schizophrenic psychosis							
D'Souza et al. (2005)	Randomised, double-blind, placebo-controlled trial	Intravenous THC (2.5 mg or 5 mg)	13 stable, antipsychotic drug treated schizophrenia patients <i>9 (69%) participants completed all three test days</i>	Over 3 test days, patients were randomised to receive 2.5 mg or 5 mg THC, or placebo in a counterbalanced order. Tests days were separated by at least one week.	Safety and cognitive, behavioural, motor, and neurochemical effects	THC transiently increased a range of positive and negative schizophrenia symptoms, learning and recall deficits, perceptual alterations, and medication side effects associated with schizophrenia. It failed to produce any obvious "beneficial effects".	No serious long or short term side effects were reported, but a comparison found patients with schizophrenia were more vulnerable to THC effects on learning and memory than healthy subject

Two studies, comprising a total of 36 participants, evaluated the effects of oral THC on Gilles de la Tourette syndrome (Müller-Vahl, et al., 2002; Müller-Vahl, et al., 2003). Gilles de la Tourette syndrome is a neurological condition characterised by rapid movements and sounds (called tics), and a range of behavioural and cognitive features (Müller-Vahl, et al., 2003). Both studies produced results indicating positive effects of oral THC; a significant reduction of motor and vocal tics, obsessive compulsive behaviour, and an improvement in the Tourette Syndrome Clinical Global Impression Scale (CGIS) scores was reported. However, it is difficult to draw a conclusion on the effectiveness of cannabis constituents from the results of two trials with relatively small samples, one of which used only single-dose THC. While preliminary, the results are promising and suggest that oral THC has the potential to reduce tics associated with Tourette's syndrome without serious side effects. Further research is needed to establish the optimal dosage and compare oral THC to other routes of administration in order to determine the most effective one. Larger-scale and longer studies are also necessary to determine the long term effects of cannabis and its constituents and evaluate their potential in treatment of tics in Tourette's syndrome.

One study of 19 participants examined the effects of Cannador on patients with Parkinson's disease (Carroll, et al., 2004). The cannabis derivatives did not demonstrate an anti-Parkinsonian effect in a controlled clinical setting (Carroll, et al., 2004). Lack of significant effect in the Carroll et al. (2004) study could be attributed to failure in most patients to attain a recommended treatment dose, although this conclusion is difficult to make due to low number of participants, route of administration, and the complexity of the disease. The results so far have not been promising and indicate that cannabinoids are not very effective in the treatment of dyskinesia nor do they have anti-Parkinsonian effects.

One study of 15 epileptic patients who did not obtain satisfactory results with their prescribed anticonvulsant medication found that cannabidiol treatment led to improvement in the EEG pattern (Cunha, et al., 1980). While the results were encouraging, a major caveat of the study is that no tests of significance were conducted. Since 1980, no further clinical trials that fit the inclusion criteria for this review have been conducted in order to confirm the results reported by Cunha et al. (1980). While cannabis may have anticonvulsant properties, one study is insufficient to draw firm conclusions. In the study described here, patients continued using their prescribed anticonvulsant medication, which makes it difficult to determine whether CBD potentiated the effects of anticonvulsant treatments or worked independently. Further studies are therefore required in order to explore the therapeutic potential of cannabis and its derivatives on epilepsy.

While anecdotal evidence has suggested that cannabis is effective in the treatment of glaucoma, the number of randomised controlled studies which have assessed the effectiveness of cannabis and its extracts on treatment of intraocular pressure is very limited. One study assessed the efficacy of THC and CBD in the treatment of glaucoma in six patients with ocular hypertension or early primary angle glaucoma (Tomida, et al., 2006). Results indicated that THC could be beneficial in the treatment of intraocular pressure, but effects were dose-dependent; two hours after administration of 5 mg THC the intraocular pressure was significantly lower than after placebo. However, valid conclusions cannot be drawn from one small-scale study and more research into the appropriate dosage benefits and risks of cannabis use in treatment of glaucoma is needed before conclusions can be made.

One study assessed the efficacy of Sativex as an add-on treatment for bladder dysfunction in 135 patients with MS (Kavia, et al., 2010). Sativex marginally reduced

the daily number of urinary episodes, but statistical significance was not reached. A statistical difference was reached in the decrease of number of episodes of nocturia, number of voids per day, patient impression of change, and overall bladder condition. Due to the limited number of studies, a valid conclusion on the effectiveness of Sativex or other cannabis derivatives in treating bladder dysfunction cannot be reached. The results reported here, however, are promising and warrant further research into the effects of cannabis and its constituents in treatment of bladder dysfunction.

One study examining the effects of cannabis constituents in patients with schizophrenic psychosis met the inclusion criteria for this review. A 3-day study by D'Souza et al. (2005) examined the effect of intravenous THC administration on 13 stable, antipsychotic drug treated schizophrenia patients. The data from the study were compared with effects in healthy subjects reported by other studies, but the results failed to produce any obvious beneficial effects. Due to the limited number of studies, low number of participants, and a low retention rate, it can be concluded that THC did not show promise in the treatment or management of schizophrenia symptoms.

Sleep. While no study of cannabis and its constituents has been identified in which sleep was the primary disorder, cannabis' sleep-inducing properties and effects on quality of sleep have been mentioned in a number of studies discussed in this review (Berman, et al., 2004; Blake, et al., 2006; Notcutt, et al., 2004; Wade, et al., 2004; Wade, et al., 2003; Zajicek et al., 2005). In a study of 48 patients with neuropathic pain, Berman et al. (2004) found that both THC (2.7 mg in sublingual spray) and a combination of THC and CBD produced statistically significant improvements in sleep quality. Similar results were reported by Notcutt et al. (2004) who found that sleep quality was significantly better in a subjective assessment of 34 patients receiving THC alone, CBD alone, and a THC/ CBD combination compared with placebo.

Zajicek et al. (2005) found that synthetic oral THC (Marinol) capsules and cannabis extract (2.5 mg THC and 1.25 mg CBD) produced a statistically significant improvement in subjective ratings of sleep quality in a study of 630 patients with MS. In another study of 18 patients with MS, Wade et al. (2003) reported a statistically significant improvement in sleep quality with a combination of THC (2.5 mg) and CBD (2.5 mg) compared with placebo. Wade et al. (2004) conducted a study of 160 patients with MS and found a statistically significant subjective improvement in sleep quality with a cannabis extract (2.7 mg THC and 2.5 mg CBD) compared to placebo. Lastly, Blake et al. (2006) reported that Sativex use led to a statistically significant improvement in sleep quality in a study of 58 patients with arthritis.

The secondary outcome measures from the studies discussed in this review indicate that cannabis has sleep-inducing properties and can potentially improve sleep quality. However, a study primarily on cannabis' sleep-inducing properties has not been identified by this review. While encouraging, the current results are limited and further research is needed in this area. Future studies should aim to specifically focus on cannabis' potential to improve the quality of sleep, its effectiveness in the treatment of sleep disorders, and the viability of such use.

Systematic Reviews and Meta-analyses

This literature review also identified nine systematic reviews and three meta-analyses on cannabis and cannabinoids in the treatment of some debilitating medical conditions (Campbell et al., 2001; Cotter, 2009; Iskedjian, 2007; Lakhan & Rowland, 2009; Lynch & Campbell, 2011; Machado Rocha, Dos Santos Júnior, Stefano, & Da Silveira, 2014; Machado Rocha, Stéfano, De Cássia Haiek, Rosa Oliveira, & Da Silveira, 2008; Martín-Sánchez, Furukawa, Taylor, & Martin, 2009; Tramer et al., 2001). A systematic review by Tramer et al. (2001) and a systematic review and meta-

analysis by Machado Rocha et al. (2008) were excluded as they only reviewed studies of synthetic cannabinoids and as such were beyond the scope of this thesis.

Campbell et al. (2001) completed a systematic review of nine studies of cannabis given by any route of administration with any analgesic or placebo in patients with acute, chronic, non-malignant, or cancer pain. However, no studies of smoked cannabis were included in the review. Campbell et al. (2001) evaluated nine studies; five related to cancer pain, two to chronic and non-malignant pain, and two to acute postoperative pain. Campbell et al. (2001) found that cannabinoids had a moderate effect on pain, but were no more effective than codeine in controlling pain. The study concluded that due to their adverse effects, cannabinoids were unlikely to be useful in acute pain.

Martín-Sánchez et al. (2009) completed a systematic review and meta-analysis of 18 double-blind, randomised controlled trials to assess the efficacy and harms of cannabis preparations in the treatment of chronic pain. Five of the reviewed studies examined Sativex, four examined TCH capsules and oromucosal spray, and eight examined synthetic cannabinoids. Similarly to the review completed in this thesis, the systematic review conducted by Martín-Sánchez et al. (2009) found evidence of efficacy in the use of cannabis therapy for patients with chronic pain. The meta-analysis found that cannabinoids reduced visual analogue scale scores of pain by -0.61 (-0.84 to -0.37), but the authors concluded that effects may be offset by potentially serious harm. In terms of efficacy, the results indicated a positive and moderate short-term trend toward a reduction in the intensity of pain in chronic patients, but the authors questioned the long-term effectiveness of cannabis due to a high number of adverse effects reported by patients.

More recently, Lynch and Campbell (2011) conducted a systematic review of 18 randomised controlled trials of cannabinoids in management of chronic pain; four trials examined smoked cannabis, seven examined oromucosal extracts of cannabis based medicine, and eight studies examined synthetic cannabinoids. The review found modest analgesic effects in non-chronic non-cancer patients. Similarly to this literature review, several trials reviewed by Lynch and Campbell (2011) reported significant improvements in sleep. There were no serious adverse events reported, with most common adverse effects being sedation, dizziness, dry mouth, nausea and disturbances in concentration. Adverse effects were generally described as being well tolerated, transient, and mild to moderate. The main limitations to findings by Lynch and Campbell were short trial duration, small sample sizes, and modest effect sizes. As a result, Lynch and Campbell (2011) called for larger trials of longer duration so that efficacy and safety of cannabinoids can be examined over the long term and in greater numbers of patients.

A meta-analysis by Iskedjian (2007) examined the efficacy and safety data of cannabinoid-based drugs for neuropathic and MS related pain. Data were extracted from four studies looked at Sativex, five at cannabidiol, and three dronabinol. Iskedjian found statistically significant lowering of pain scores; some patients did not obtain relief while others responded very well. However, the analysis was limited by a small number of trials and patients, and assumption that pain in MS and any neuropathic pain would be affected in the same manner (Iskedjian, 2007).

Cotter (2009) reviewed 10 clinical trials of smoked and oral synthetic THC in order to ascertain whether they are effective in the treatment of chemotherapy-induced nausea and vomiting. Cotter found that cannabis and synthetic oral THC were more effective than placebo in treating nausea and vomiting. Smoked cannabis and oral

synthetic THC were found to be equally effective in controlling symptoms of nausea and vomiting when compared to traditional antiemetics. However, side effects of both were greater when compared to placebo and other antiemetics. The review also found that patients did not have significant preference for oral THC capsules as opposed to traditional antiemetics. Some patients were unable to tolerate cannabis smoke and it was deemed unacceptable to many patients. As such, Cotter (2009) suggested the addition of cannabinoids to existing antiemetic regimens may provide increased relief of chemotherapy-induced nausea and vomiting.

Similarly to the review completed for this thesis, Lakhan and Rowland (2009) conducted a systematic review of six studies of whole plant cannabis extract in the treatment of spasticity in MS. The studies were reviewed for treatment dosage and duration, objective and subjective measures of spasticity, and reports of adverse effects. The review found evidence that combined extracts of THC and CBD may reduce symptoms of spasticity in patients with MS. However, subjective measures of spasticity were found to be significant while objective measures failed to show significant changes. Adverse health effects were reported in each trial in which patients received active treatment, and varied greatly depending on dosage. The review found some evidence that combined extracts of THC and CBD may reduce the side effects of THC alone.

Lastly, Machado Rocha et al. (2014) completed a systematic review of literature on clinical and experimental trials of antitumor effects of cannabinoids on gliomas (primary tumours originating in the glial cells). Machado Rocha et al. (2014) reviewed 35 studies; one study was a pilot phase I/II clinical trial done on human participants, and the remaining were experimental studies of patients with gliomas, laboratory animals, and glioma cells in in vitro experiments. In all experimental studies reviewed,

cannabinoids showed antitumoral activity in vitro and/or antitumoral evidence in vivo in several models of tumour cells and tumours. The review concluded that cannabinoids show promise in the treatment of gliomas, especially on account of present scarcity of effective resources to treat some types of cancers (Machado Rocha et al., 2014).

Because the review completed for this thesis only included randomised controlled trials, it is difficult to compare the findings of the two reviews, but Machado Rocha et al. (2014) review results appear encouraging and indicate that there are perhaps conditions which cannabis can be used for that research has not yet explored.

Reports

As well as controlled trials and reviews, the medical uses of cannabis and its derivatives have been reviewed and recommendations made by various bodies including the U.S. IOM, the British House of Lords Select Committee on Science and Technology, the AMA, the American College of Physicians, and the New South Wales Working Party on the Use of Cannabis for Medical Purposes (Working Party) (ACP, 2008; AMA, 2009; Center for Medicinal Cannabis Research, 2010; House of Lords, 1998; IOM, 1999; Working Party on the Use of Cannabis for Medical Purposes [WPUCMP], 2000). The 1999 IOM report recognised that cannabis has therapeutic properties and recommended that the drug be made available to individuals requiring it (IOM, 1999). The report also found evidence to show that cannabis can be effective for the treatment of pain, nausea and vomiting, and weight loss associated with HIV/AIDS. It found no significant data showing that cannabis was a “gateway” drug, leading to other drug use. Similarly to the findings of the review in this thesis, the IOM report inferred that there were no significant benefits of cannabis use in the treatment of glaucoma compared to other already available medicines. The report concluded that:

The critical issue is not whether marijuana or cannabinoid drugs might be superior to the new drugs, but whether some group of patients might obtain added or better relief from marijuana or cannabinoid drugs. (p. 153).

The Working Party (WPUCMP, 2000) report concluded that there was evidence for cannabis' use for the treatment and management of the wasting syndrome; pain unrelieved by conventional treatments; neurological disorders, including but not limited to, multiple sclerosis, Tourette's syndrome, and motor neurone disease; and chemotherapy-related nausea and vomiting. The Working Party report, however, called for further controlled trials in order to examine the benefits of cannabis and its constituents and their effectiveness in the treatment of the abovementioned medical conditions. Smoking was also not the preferred method of administering the drug, and further research into other routes of cannabis administration was recommended (WPUCMP, 2000).

Britain's House of Lords concluded that cannabis had potential medical benefits and could assist patients for whom other conventional medicines have proven ineffective (House of Lords, 1998). The report found that there was sufficient evidence to suggest that cannabis has potential to relieve pain or the symptoms of MS; enough to justify legalising cannabis' medical use. The House of Lords recommended research into effective modes of cannabis administration other than smoking, and encouraged further clinical trials evaluating the drug's medicinal properties.

The AMA (2009) also called for more controlled clinical studies to be conducted on cannabis as a medicine and recommended a review of cannabis' Schedule I classification in order to enable more research to be conducted on its potential as a

medicine. The association also urged the NIH to implement administrative procedures which would assist in developing and conducting clinical trials into medicinal properties of cannabis (AMA, 2009).

Overall, the conclusions made by these reports were not uniform. For example, in terms of debilitating medical conditions, three reports concluded that there were adequate data from controlled trials to support cannabis' anti-nausea effects (House of Lords, 1998; IOM, 1999; WPUCMP, 2000). Similarly, three reviews concluded that there was reasonable scientific evidence supporting the effectiveness of cannabis and its constituents in appetite stimulation, while the House of Lords report concluded that the evidence was unclear (AMA, 2009; House of Lords, 1998; IOM, 1999; WPUCMP, 2000). The House of Lords (1998) report raised concern for use of cannabis in AIDS, due to the drug's immunosuppressive effects. However, the other side to this argument is whether patients with terminal illnesses should be prevented from using cannabis if it helps them and in the absence of other effective medication, even with its long-term effects being unclear. Evidence also suggests that cannabis can be an effective antiemetic, even superior to some antiemetic drugs, but the issue of its side effects in comparison to other antiemetics needs to be further explored. While the review undertaken for this thesis concluded that cannabis may have anti-emetic properties, further studies were recommended. Similarly to the reports, the review undertaken for this thesis indicated that cannabis does have therapeutic potential as an analgesic.

The House of Lords (1998) report concluded that there was strong anecdotal evidence for cannabis' therapeutic potential in the treatment of MS-related symptoms, and recommended urgent clinical trials of cannabis' effectiveness for the treatment of MS. In comparison to the review presented in this thesis, these results seem generous. While the House of Lords referenced anecdotal reports, the review completed in this

thesis covered only randomised, double-blind human trials which indicated that the clinical evidence on the use of cannabis in multiple sclerosis and chronic conditions involving spasticity was promising but required further study. In terms of Tourette's syndrome and motor neurone disease, the number of studies identified and included in this review was deemed too low to make valid conclusions.

The overall consensus appears to be that cannabis and its derivatives do have therapeutic benefits, with the evidence being the strongest for chronic pain, appetite stimulation and weight gain, and MS. However, there are issues with some of the evidence such as low numbers of participants, different routes of administration and dosages used, as well as differences between conditions and patient demographics. While this review only focused on clinical trials, both anecdotal and clinical reports have suggested cannabis could potentially be effective in the treatment of various debilitating medical conditions (Mack & Joy, 2000; Mather, 2005). In terms of this review, the strongest evidence came from studies on cannabis' effect on pain, nausea and vomiting, and spasticity. The review completed for this thesis excluded synthetic cannabinoids and focused on the cannabis plant and its natural derivatives, which may explain the contrast in some of the findings. The following table summarises the findings for the review undertaken for this thesis, per debilitating medical condition, in comparison to the five reports on medical cannabis discussed here.

Table 9

A Summary of Findings per Medical Condition

Medical Condition	This Review	IOM	House of Lords	AMA	American College of Physicians	Working Party	Campbell et al. (2001)	Martín Sánchez et al.	Lynch and Campbell (2011)	Iskedjian (2007)	Cotter (2009)	Lakhan and Rowland (2009)	Machado Rocha et al. (2014)
Pain	xxxx Chronic xx Acute	xxxx Chronic xx Acute	xxxx Chronic	xxxx Chronic	xxxx	xxx Chronic xx Pain management	x	xxx	xx	xxxx Neuropathic and MS related			
Nausea and vomiting	xxx	xx	N/A	x	xxxx	xxxx					xxxx		
Spasticity	xxx	xx	xxxx MS	xxx	xxx	xx						xxx	
Appetite/Weight	xx	xxxx	N/A	xxxx	xxxx	xxx							
Gilles de la Tourette syndrome	xx	xxx	N/A	N/A	N/A	xxx							
Movement disorders Parkinson's disease Dystonia	x	x	N/A	N/A	xxx	xx							
Epilepsy	x	x	x	N/A	x	x							
Glaucoma	xx	x	x	x	x	x							
Bladder dysfunction	xx	N/A	N/A	N/A	N/A	N/A							

Sleep	xx	N/A	N/A	N/A	N/A	N/A			xx				
Other													xx Gliomas

xxxx Recommended- strong supporting evidence

xxx Encouraging- some supporting evidence, might have a role, further research needed

xx Promising, but further research is needed

x Not recommended- very limited or no supporting evidence

N/A Not available

When evaluating cannabis' effectiveness in the treatment of some debilitating medical conditions, it is important to consider the side effects of cannabis use and determine whether the benefits outweigh the risks for patients. The adverse effects are discussed next.

Adverse Effects of Cannabis Use

Generally, THC is considered a very safe drug, both acutely and on long-term exposure (Iversen, 2000). It is estimated that a fatal human dose of THC is between 15g and 70g, which is much higher than that smoked by a heavy user (Hall & Degenhardt, 2009). However, it is cannabis' psychoactive effects that give the greatest concern in considering it for medical use. Patients who have not had any prior experience with cannabis often find the intoxicant effects disturbing, while others do not like experiencing the feeling of "high". The drug also affects short-term memory and other aspects of cognition, and can impair psychomotor skills. Although cannabis is generally safe for moderate use, the likelihood of adverse effects increases with long-term, heavy use (Gieringer et al., 2008). There is also growing recognition that both tolerance and dependence can occur in some chronic users of the drug (Iversen, 2000). Research has also raised concerns about cannabis and psychosis, although there are currently no data on the extent of risk for psychotic symptoms among medical cannabis users (Degenhardt & Hall, 2008). The epidemiological data on the long-term effects of cannabis is still scarce and long-term studies are encouraged.

More specifically, there are also concerns over the use of the drug by smoking. While smoking can be an efficient way of titrating dosage and delivering an appropriate dose of THC to the patient, the method of delivery is not considered to be safe. Cannabis smoke is very similar in chemical composition to tobacco smoke, which

contains more than 6000 chemical constituents, with thousands more present in trace amounts. Cannabis joints have also been shown to deliver at least four times as much tar to the lungs as tobacco cigarettes of equivalent weight (Mack & Joy, 2001). Due to its similarity to tobacco smoke, cannabis can have possible links to chronic respiratory disease and cancer. Because of its potential for harm, it is unlikely that smoked cannabis will ever be approved by the FDA for the long-term treatment of any illness where its use needs to be regular. On the other hand, it could be argued that in patients with terminal illness or with reduced life expectancy because of illness, the long-term health effects of cannabis are irrelevant and smoked cannabis could be a viable option for them if their illness does not respond to conventional medicine.

In terms of medical cannabis, this literature review identified one systematic review of 31 studies with published adverse effects of medical cannabinoid use (23 randomised controlled trials and eight observational studies) (Wang, Collet, Shapiro, & Ware, 2008). No randomised controlled trials of medical cannabis administered by smoking were included in the review. Wang et al. (2008) excluded studies that focused on adverse effects of cannabis occurring in combination with other agents and those that involved synthetic cannabinoids. Respiratory (16.5%), gastrointestinal (16.5%), and nervous system disorders (15.2%) were the most frequently reported categories of serious adverse events among those patients assigned to receive cannabinoids, while nervous system disorders (30%) was the most frequently reported adverse event among controls. There was no evidence of a higher incidence of serious adverse events following medical cannabis use compared with controls. In 23 controlled clinical trials reviewed, nervous system disorders were the most frequently reported non-serious adverse event for both groups. In the eight observational studies, nervous system

disorders were the most frequently reported category for both serious and non-serious adverse events. Psychiatric disorders were the second most frequently reported category. Overall, incidence rate of non-serious adverse events was significantly higher among subjects assigned to cannabinoid therapy than among those assigned to control groups (Wang et al., 2008).

Long-term adverse effects were not well defined in clinical trials and observational studies reviewed by Wang et al. (2008), therefore more high-quality trials of long-term exposure were deemed necessary. Wang et al. (2008) cautioned against assuming that the adverse effects commonly reported in recreational cannabis use can be expected to occur with medical use of cannabis, as “the amounts used, the existence of comorbidities and the methods of drug delivery are different in the two populations, which should therefore be evaluated separately” (p. 1676).

While much of what is known about the long-term effects of cannabis use comes from recreational users, the long-term effects of medical use of cannabis are unclear (Degenhardt & Hall, 2008). According to Degenhardt and Hall (2008), we “know nothing of the risks of incident cannabis dependence in the context of long-term supervised medical use” (p. 1686). While short-term use of cannabinoids for medical purposes has an acceptable safety profile, more research is needed on the adverse effects of long-term use of cannabinoids for medical purposes, especially in those patients who smoke cannabis for medical purposes (Degenhardt & Hall, 2008). Because the effects of cannabis depend on the dose received, the route of administration, the users previous experience with the drug and the setting in which it is used, future research will need to take these factors into consideration if we are to get a clearer picture of the long-term effects of medical cannabis use.

Discussion

Overall, the research evidence reviewed here has shown that cannabis and its constituents have therapeutic potential for a number of conditions, some for which the evidence is mixed and unclear. Most of the research evidence supports the use of cannabis in the treatment of chronic pain, spasticity, nausea and vomiting, and as an appetite stimulant for AIDS-related wasting syndrome.

Although the research on nausea and vomiting is relatively old, a substantial amount of research has been conducted on the topic to suggest cannabis may have therapeutic potential. However, this review excluded studies on synthetic cannabinoids such as the already available dronabinol and nabilone, which have already been approved by the FDA for this purpose. The studies reviewed here showed encouraging results in terms of the antiemetic effects of oral THC and CBM, but no study focused on smoked cannabis which has now been legalised in 17 U.S. states. The question that this raises is whether any more anti-emetic cannabis derivatives are needed with two already legally available? The other issue is that some patients, especially those with nausea and vomiting, struggle with taking oral tablets, and therefore may benefit from other modes of administration. However, with no studies completed on smoked cannabis in the treatment of nausea and vomiting included in the review undertaken for this thesis, it is impossible to draw a conclusion on its effects based on scientific evidence.

While conclusions on cannabis' analgesic effectiveness are somewhat mixed, its effectiveness in the treatment of chronic neuropathic pain is well documented. The same, however, cannot be said for acute pain. Systematic reviews on cannabis' analgesic properties found that cannabis had a moderate to significant effect on pain, depending on dosage and patient, but there were concerns over its adverse effects

(Campbell et al., 2001; Iskedjian, 2007; Lynch & Campbell, 2011; Martín-Sánchez et al., 2009). Overall, research included in this review has indicated that cannabis does have therapeutic potential as an analgesic medication, but further research is needed to evaluate the extent of cannabis' therapeutic potential and the effects of its long-term therapeutic use.

Cannabis' therapeutic role in the treatment of spasticity is also relatively well documented but is mainly based on subjective ratings by the participants, which makes it difficult to draw valid conclusions regarding its clinical efficacy. A systematic review by Lakhan and Rowland (2009) found evidence that combined extracts of THC and CBD may reduce symptoms of spasticity in patients with MS, but similarly to this review significant findings were obtained from subjective measures of spasticity while objective measures were not. However, cannabis in the treatment of spasticity does show potential in both long and short term treatment and further research in the field is warranted.

Only one randomised, double-blind study on glaucoma fitted the inclusion criteria for this review. While THC did show some short-term potential in the treatment of intraocular pressure, further research exploring different methods of cannabis administration and long-term studies are needed before valid conclusions can be drawn. Results for other less researched conditions such as insomnia, epilepsy, and Tourette's syndrome warrant further research.

While cannabis and its derivatives have been found to have therapeutic potential, they also produce some unwanted side-effects. Some of the possible side-effects of cannabis include an increase in heart rate; decrease in blood pressure; impairment of

short-term memory, attention, motor skills, reaction times; fatigue; vertigo; euphoria; dysphoria; hallucinations; and the organisation and integration of complex information. Smoked cannabis also contains many of the same compounds of tobacco smoke, and can lead to cancer and lung damage (ACP, 2008).

Short term effects such as feeling the psychoactive effect of the drug, anxiety, panic, paranoia, and feelings of impending doom, are not considered as a serious limitation to cannabis' medical use because they can be controlled by dosage, and can also be experienced with other conventional medication. Long term effects are difficult to assess and may include effects on cognitive performance, respiratory disorders, and lung cancer due to smoking. Possible tolerance may make medical use of the drug difficult, although this can be experienced with other conventional medication and is not considered a major problem in the medical use of cannabis. While the research so far has identified the potential side effects of cannabis use, it should be acknowledged that other conventional medicines also have recognised side effects, which need to be weighed against their benefits. For conditions such as multiple sclerosis, which aren't always successfully treated by other medicines, medical cannabis may be a beneficial addition to treatment or management of the condition (Zajicek, et al., 2003).

Optimal doses and routes of cannabis administration have not yet been established through scientific research (Robson, 2001). Different routes of administration appear to be appropriate for different medical conditions and an accurate titration of effects and reliability is necessary. Smoking is generally not the recommended route of administration, and further research is therefore necessary in order to establish an alternative route of administration, with both short and long term safety and efficacy (House of Lords, 1998; Robson, 2001; WPUCMP, 2000). However,

it may take years to develop effective alternative methods or devices for delivering THC (WPUCMP, 2000).

As suggested by this review, there is evidence supporting cannabis' therapeutic use for some medical conditions. In the U.S., at the time when the material for this thesis was collected, 17 states and the District of Columbia had enacted laws allowing smoked cannabis to be used for medicinal purposes (NORML, 2010). While there are promising results in terms of cannabis' potential in treating some debilitating medical conditions, more studies are urgently needed to test the effectiveness of different routes of administration. In this literature review of 38 studies, only six studies (16%) evaluated smoked cannabis; four in the treatment of chronic pain, one in treatment of acute pain, and one in appetite stimulation. The long-term effects of medical cannabis use also remain relatively unknown and urgently need to be researched. However, Wang et al. (2008) cautioned against comparing the adverse effects of recreational and medical cannabis users as the way in which they use the drug differs, therefore long-term studies of medical smoked cannabis use are required.

While there is undoubtedly evidence for cannabis' potential as a medicine, the question arises of how much of a role scientific evidence played in influencing policymakers and leading to change in state laws to allow for medical cannabis use? While many would disagree on the interpretation of the medical cannabis literature, one would assume that reasoned scientific debate would play an important part in public health policy development. Why did laws in the 17 states focus on smoking as the mode of administering medical cannabis as opposed to other modes of administration? What factors played a role in the 17 states that led to the medical cannabis laws being passed? In order to understand what happened in this policy process it is important to determine

the role scientific evidence plays in public health policy making and identify factors it contends with in the sometimes arduous policy making process (Birkland, 2005; Ritter, 2009).

It is also important to understand how the context in which these policy changes took place and the process that occurred before medical cannabis laws came to be enacted in 17 of 50 U.S. states and the District of Columbia. For the purpose of this thesis, two representative states were chosen as examples of how medical cannabis laws came to be passed. Michigan was chosen as a representative state for medical cannabis laws passed by ballot initiative, while New Mexico was chosen as a representative state for medical cannabis laws passed by the legislative process. The states were chosen because they were the most recent states to pass a medical cannabis law at the time of writing this thesis.

Three other representative states (Illinois, Kentucky, and Louisiana) were chosen. Illinois was chosen as a state which is considering medical cannabis laws, but has not passed one to date⁴. Kentucky was chosen as a state which has no medical cannabis laws and has not considered one, while Louisiana is a state which has not considered passing a medical cannabis law, but has an ineffective, symbolic, medical cannabis law on its books.

The chronological accounts in the following chapter will outline what happened in each of the representative states in terms of medical cannabis and the use of media

⁴ Illinois became the 20th state in the U.S. to legalise medical cannabis in July 2013, after this thesis was submitted.

available to the general public will allow the reader to see how the issue was framed in those particular states.

Chapter 4- Medical Cannabis in Five Representative States

For the purpose of this thesis, two representative states were chosen as examples of how medical cannabis laws came to be passed. Michigan was chosen as a representative state for medical cannabis laws passed by ballot initiative, while New Mexico was chosen as a representative state for medical cannabis laws passed by the legislative process. The states were chosen because they were the most recent states to pass a medical cannabis law at the time of writing this thesis.⁵

Three other representative states (Illinois, Kentucky, and Louisiana) were chosen. Illinois was chosen as a state which is considering medical cannabis laws, but has not passed one to date.⁶ Kentucky was chosen as a state which has no medical cannabis laws and has not considered one, while Louisiana is a state which has not considered passing a medical cannabis law, but has an ineffective, symbolic, medical cannabis law on its books.⁷

The chronological accounts in the following five chapters were generated through a review of publicly available literature including government publications, newspaper articles, parliamentary proceedings, court documents, and press releases. A general internet search using Google as a search engine was also made with the use of the keywords including the name of the state in question and “cannabis”, “marijuana”, “marihuana”, “medical”, “medicinal”, and “therapeutic”, “law”; and/or a combination

⁵ The study was completed in 2011 and thesis submitted for examination in 2012.

⁶ At the time of writing this thesis, Illinois did not pass a medical cannabis law. Illinois subsequently passed a medical cannabis law on August 1, 2013.

⁷ At the time of writing this thesis Kentucky and Louisiana did not consider medical cannabis law. Since then, there have been activities in both states in relation to medical cannabis.

of these keywords. Additional newspaper reports were also identified through the Media Awareness Project website, <http://www.mapinc.org/>.

Michigan

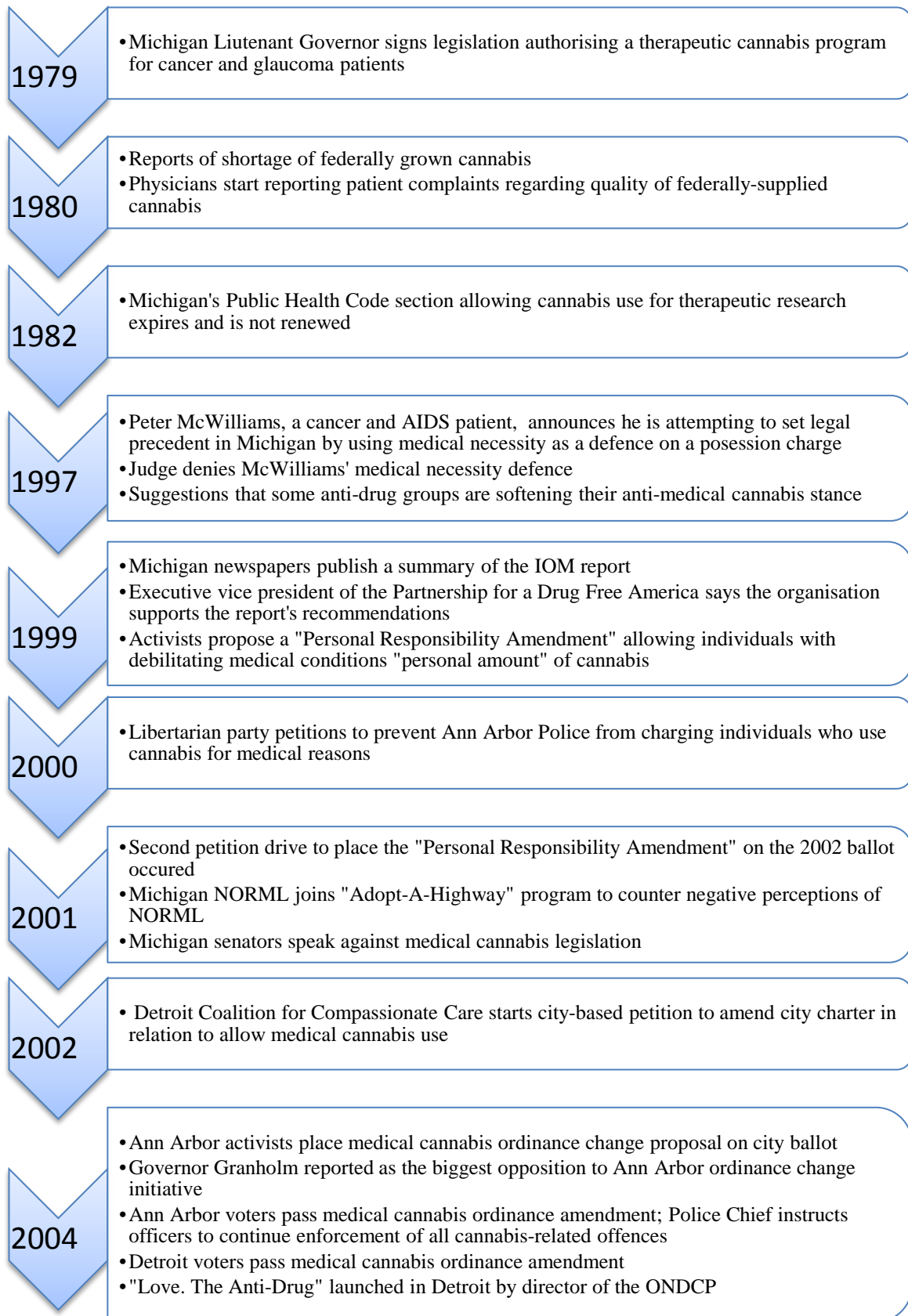
On November 4, 2008, the Michigan Medical Marihuana Act, which allows the use of medical cannabis for qualifying patients, was approved by Michigan voters through a ballot initiative (Michigan Medical Marihuana Act, 2008). The act took effect on December 4, 2008, and allows patients with specific debilitating medical conditions to acquire, possess, cultivate, manufacture, use, deliver, transfer or transport medical marijuana and paraphernalia relating to marijuana administration, in order to treat or alleviate a debilitating medical condition (Michigan Medical Marihuana Act, 2008). A qualifying patient is only allowed to have one caregiver, while a caregiver can care for a maximum of five patients. Specifically, a debilitating medical condition is defined by the act as one or more of the following: cancer, glaucoma, positive status for human immunodeficiency virus, acquired immune deficiency syndrome, hepatitis C, amyotrophic lateral sclerosis, Crohn's disease, agitation of Alzheimer's disease, nail patella, or symptoms of conditions such as cachexia or wasting syndrome. The patient or their carer can legally possess up to 2.5 ounces (70.9g) of usable marijuana, and grow, in an enclosed, locked facility, up to 12 plants. The law does not specify how the seedlings or plants are to be obtained by the patient or their caregiver in order for them to be grown (Michigan Medical Marihuana Act, 2008).

In order to qualify for the program, individuals meeting the specific criteria are required to obtain an identification card from the Michigan Department of Community Health (MDCH) in which the act vested responsibility for medical cannabis program implementation and administration (Michigan Medical Marihuana Act, 2008). In order to qualify, patients must also have a recommendation from their physician saying that

they will benefit from the use of medical marijuana. According to the act, the physician will be exempt from arrest, prosecution or penalty in Michigan.

At the state level, qualifying individuals and their carers can also assert medical reasons for using cannabis as a defence to any prosecution involving their cannabis use and/or possession. The defence is not limited to registered patients only, and, while it does not protect a patient from arrest, it requires the charges to be dropped if the patient can prove that a doctor has stated they will benefit from marijuana use, they did not possess more than the necessary amount, and that the possession, manufacture or delivery of the drug was done for the purpose of treating the patient (Michigan Medical Marihuana Act, 2008).

In the following section, Figure 2 will chronologically review the history of medical cannabis in Michigan, followed by a chronological description of the process by which the act was passed.



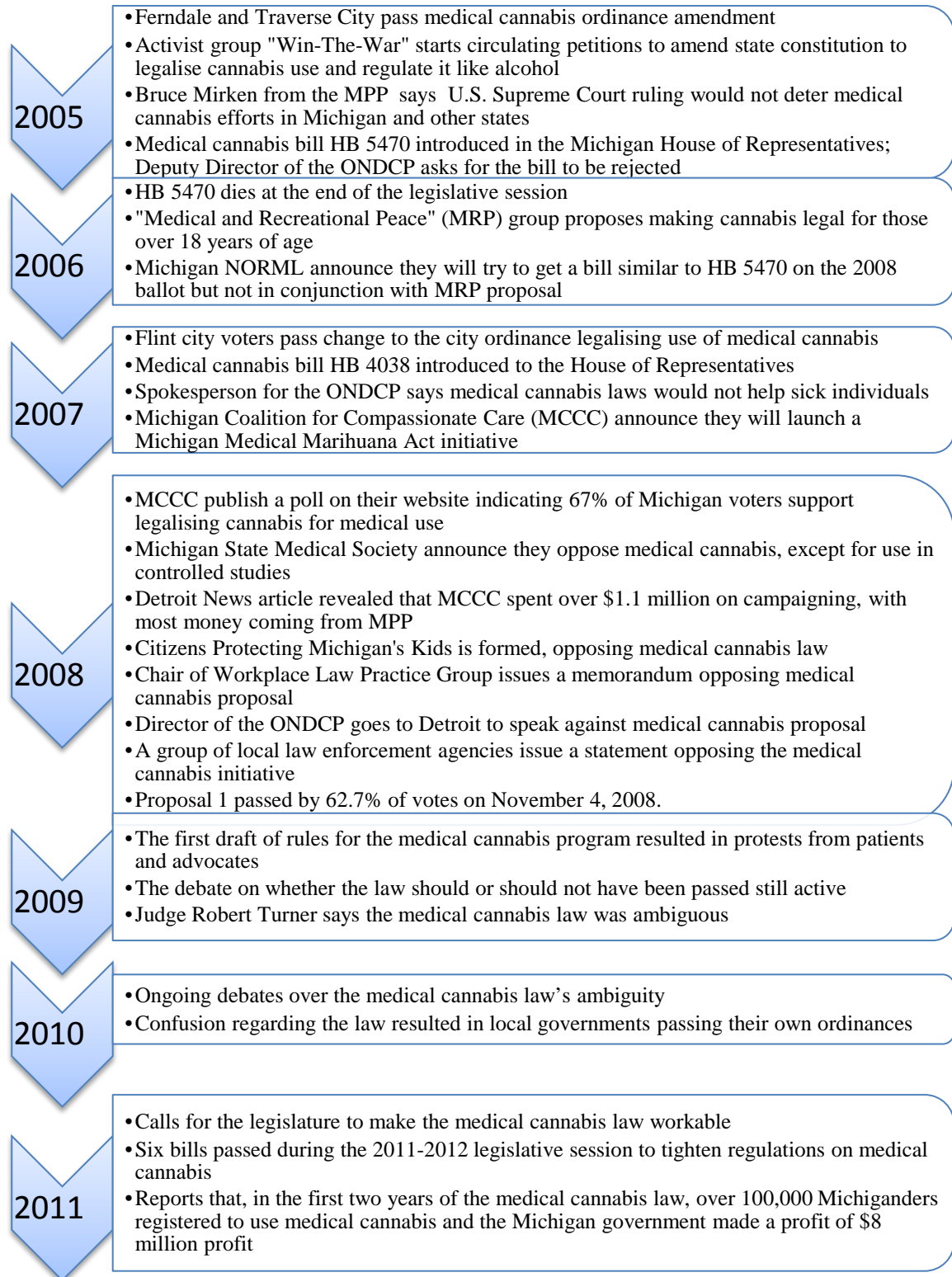


Figure 2. Time chart of medical cannabis history in Michigan.

2008 Michigan Medical Marijuana Act: Chronological account. In the 1970s, Michigan was one of the first states to authorise cannabis use for therapeutic purposes (Drug Enforcement Administration [DEA], n.d.; MPP, 2013). In 1978 Roger D. Winthrop, who organised the Michigan chapter of the NORML and lobbied the Michigan legislature on issues including Michigan drug policy reforms, asked Senator Jerry Hart (Democrat [D]) to sponsor cannabis-related legislation (DEA, n.d.). The legislation sought to make cannabis available for glaucoma and cancer patients, and those undergoing neurological therapies. Hart agreed, and the legislation was introduced at the start of the 1979/1980 legislative session. Senator Hart had previously introduced a bill aimed toward decriminalising general cannabis use, which was defeated at the end of the 1977/1978 legislative session. He intended to reintroduce the bill with an added section for medical cannabis use (DEA, n.d.).

At the same time, Senator Steve Monsma (D) wanted to introduce medical cannabis legislation separately from Senator Hart's (DEA, n.d.). Senator Monsma was concerned that being linked with general cannabis decriminalisation would jeopardise the medical initiative (DEA, n.d.). According to Winthrop, when Senator Hart's bill was heard before the Senate Judiciary committee, there was vigorous debate regarding the part of the bill aimed at cannabis decriminalisation, while there was significant public and political support for the drug's medical use. Subsequently, Senator Monsma's bill was introduced, and was modelled on New Mexico's 1978 medical cannabis legislation (DEA, n.d.).

As patients were called upon to share their medical cannabis experiences with the legislature, press coverage also grew (DEA, n.d.). According to Winthrop, it was clear that the issue of medical cannabis and general cannabis decriminalisation had to be separated, which resulted in Senator Hart agreeing to let Senator Monsma's bill take

priority. At the same time, the FDA threatened to block the medical cannabis program implementation by withholding cannabis supplies. Afterward, Senator Monsma proposed an amendment to the bill, which, if passed would have allowed the use of confiscated cannabis for treatment of patients if the necessary supply was not received from federal sources. A spokesperson for the FDA also said that, if Michigan conformed to regulations, the federal government would supply the cannabis (DEA, n.d.).

On June 25, 1979, the Michigan senate passed Senator Monsma's bill by a 29-5 vote. The bill was then moved on, and on October 3, 1979, the House Public Health Committee unanimously passed it (DEA, n.d.). On October 10, the bill went for a House hearing, and was passed by a 100-0 vote of the House. On October 22, 1979, Lieutenant Gov. James Brickley signed the legislation requiring the Michigan Department of Public Health to operate a therapeutic cannabis program for physician-recommended cancer and glaucoma patients, as Public Act 125 of 1979 (Public Health Code Act, 1978).

In 1980, it was advised that there was a shortage of federally grown cannabis (DEA, n.d.). Physicians also started reporting patient complaints regarding federal cannabis quality. According to Winthrop, cannabis supplied to the Michigan therapeutic research program was lower in quality than the mandatory standards. It was suspected that the federal government had cannabis of better quality, but did not provide it for Michigan (DEA, n.d.). The Michigan Public Health Code's section, allowing cannabis use for therapeutic research expired on November 1, 1982, and has not been renewed since. This took away the health department's responsibility for establishing a therapeutic cannabis research program (Public Health Code Act, 1978).

Following the expiration of the medical cannabis legislation in 1982, no media reports focusing on medical cannabis were reported in Michigan until October of 1997 when PR Newswire, issued a press release announcing that a cancer and AIDS patient, Peter McWilliams, was attempting to set a legal precedent in Michigan by using medical necessity as a defence on a cannabis possession charge (“McWilliams Hopes”, 1997). The following day, the judge in the case, Tina Green, allowed Mr McWilliams’ lawyer to base his defence on the use of cannabis for medical purposes. However, Judge Green then changed her mind after reviewing the law and advised that McWilliams did not meet the criteria for such a defence because McWilliams not using cannabis would not result in death or serious bodily harm (Cain, 1997; “Judge Denies Author's Medical Defense”, 1997). His attempt was unsuccessful, but there followed an increase in media reports on medical cannabis (“McWilliams Hopes”, 1997). McWilliams’s house was raided by DEA in December 1997, on apparent suspicion that McWilliams was cultivating or dealing drugs (Farmanfarmaian, 1998). McWilliams alleged that the DEA was interested in the material he was collecting for a book he was writing on medical cannabis (Farmanfarmaian, 1998).

The year 1999 saw the publication of the IOM report (IOM, 1999). The Detroit Free Press published a summary of the report, which found that cannabis has medical benefits (McFarling, 1999). The article also reported that some anti-drug groups appeared to be softening their anti-medical cannabis stance, and quoted Steve Dnistrian, of the Partnership for a Drug Free America, as saying that the organisation supported the report’s recommendations as they did not want to contradict what doctors and scientists said (McFarling, 1999).

After the IOM report was published, a “Personal Responsibility Amendment” was proposed to the Michigan constitution to allow individuals with debilitating

medical conditions to grow a “personal amount” of cannabis (“Activists Promote Legalized Marijuana”, 1999). This was specified as being no more than three mature plants, seedlings, and 3 ounces (85g) of dried cannabis. The initiative, started by Gregory Schmid from the Michigan branch of the NORML, required 302,711 signatures in order to be put on the November 2000 ballot (“Legalized Marijuana”, 1999). However, the organisation encountered difficulties in organising a petition drive and did not manage to collect enough signatures (Trahan, 2001). This was the first attempt at passing medical cannabis legislation in Michigan since the 1980s.

A second petition drive to place the “Personal Responsibility Amendment” on the 2002 ballot occurred at the annual Ann Arbor ‘Hash Bash’, where people gather to protest cannabis prohibition (Restivo, 2001; Trahan, 2001). Gregory Smith, who organised the previous year’s petition, said he was confident enough signatures would be gathered despite having limited funding (Trahan, 2001). Articles were published in support of medical cannabis and encouraged people to vote for it (“Just Say Yes”, 2001; “Marijuana- Leave Room”, 2001). The Michigan NORML chapter also joined Michigan’s Adopt-A-Highway program, committing to pick up litter on a 2-mile stretch of road, in order to counter negative perceptions people might have of the NORML (“Pro-Marijuana Group Sponsors”, 2003).

Despite the “Personal Responsibility Amendment” failing, the issue of medical cannabis continued to be discussed in the media and both opponents and proponents of medical cannabis were making their opinions heard. Michigan Senator Bill Bullard Jr. (Republican [R]) spoke out against medical cannabis legislation in the state, arguing that it promoted recreational use of the drug and said that the legislature would not approve such legislation, which would leave petitioning as the only way to get medical cannabis on the ballot and this required money and organisation (Crimmins,

2001). Another senator, John Schwarz (R), said he opposed the legislation because cannabis was already available in tablet form (Marinol) (Crimmins, 2001). Robert Sharpe, the program officer for the Lindesmith Centre Drug Policy Foundation, responded to the senator's comments by stating that cannabis has been used as a medicine for thousands of years, and should be legalised and regulated (Sharpe, 2001). Movements towards medical cannabis legislation at the state level also coincided with attempts at city-level changes.

Changes at the city level. Although largely symbolic, local medical cannabis laws have the potential to influence priorities of local law enforcement officers and prosecutors (Eddy, 2010). Ann Arbor led the way at the local level, with a petition initiated by the Libertarian party aiming to prevent Ann Arbor Police from charging people who used cannabis for medical reasons (Wahlberg, 2000). However, some of the movement was not solely to do with medical cannabis and James Tudler of the Libertarian party said that the organisation aimed for the legalisation of all drugs, starting with medical cannabis ("Activists Promote Legalized Marijuana", 1999; Wahlberg, 2000). The Libertarian party failed to submit their petition on time and the amendment was not put on the city ballot (Hoffman, 2000; Meehan, 2000).

However, in 2004, activists from the Washtenaw Coalition for Compassionate Care managed to collect 7,000 signatures on a petition seeking support for amendments to the Ann Arbor ordinance (Charter for the City of Ann Arbor, 1956; Tomkie, 2004). The amendments were designed to decrease the fines for cannabis use and prohibit the local police from fining medical cannabis patients for its possession (Charter for the City of Ann Arbor, 1956; Tomkie, 2004). There was a suggestion that, if passed, Ann Arbor's ordinance amendment would set the trend towards decriminalisation of

cannabis (“Medicinal Marijuana Could Lead”, 2004; “A Possible Model for Medical Marijuana”, 2004).

The press reported that Scio Township Trustee Charles Ream, who led the Ann Arbor drive by collecting 7,000 petition signatures, paid \$1 for each voter signature using \$5,000 of his own money, while the MPP donated \$4,000 (Tee, 2004). According to the Michigan Daily, Ream decided to rely on newspaper articles and editorials to make people aware of the initiative (Tee, 2004). As was also the case in Detroit, the media reports indicated that the biggest opposition to the initiative came from Gov. Jennifer Granholm (D), who publicly said she did not approve of medical cannabis use (Tee, 2004). Despite opposition, on November 2, 2004, approximately 75 percent of Ann Arbor voters passed the ballot proposal (Rott, 2004). The following day, Ann Arbor Police Chief Dan Oates released a written statement saying he had instructed his officers to continue enforcement of all cannabis-related offences (Davis, 2004).

At the same time as Ann Arbor, there was also activity in Detroit. The Detroit Coalition for Compassionate Care (DCCC) started a city-based petition in order to amend the city charter to make medical cannabis possession the lowest law enforcement priority (O'Brien, 2002). According to Tim O'Brien, the advertising and media consultant for the DCCC, even though a city charter is superseded by state and federal laws, changing Detroit's charter could still make an impact. He believed a change could be possible as the responsibility for enforcement of cannabis possession offences fell to the local police. The proposal came under scrutiny in part because, according to the opposition, it did not specify the conditions and symptoms for which the drug could be used (O'Brien, 2002).

While the support for the initiative was strong and supporters raised \$30,000 in campaign funds, there was strong opposition from the Partnership for a Drug-Free Detroit (Angel, 2004). It was alleged in the media that the opposition was receiving funds from the federal government in order to fight against the amendment to the city code (P. Smith, 2004). Partnership for a Drug-Free Detroit stated in a published memorandum that the medical cannabis initiative should be opposed because (a) the drug was dangerous and hurt AIDS patients; (b) safer evidence-based treatments could be used instead of cannabis; and (c) the initiative was deceptive and based on politics, rather than facts (P. Smith, 2004). Despite the opposition from Gov. Granholm and suggestions that the ordinance change was only symbolic and would not guarantee that patients would not be prosecuted, the DCCC initiative appeared on the August 3 ballot and was passed (“Detroit Okays Medical Use”, 2004; Gantert, 2004; “Medical Pot Victory”, 2004).

Ferndale and Traverse City joined the medical cannabis movement, and both passed a medical cannabis ordinance amendment in November 2005 (Flesher, 2005; McConnell, 2005; McCray, 2005). The Traverse City amendment did not make medical cannabis use legal, but made it the lowest law enforcement priority (Flesher, 2005). In February 2007, Flint Coalition for Compassionate Care, which received a \$7,500 grant from the MPP, succeeded in their aim to change the city ordinance, with Flint voters supporting measures legalising the use of medical cannabis with doctor’s approval (“Flint Legalizes”, 2007; Rook, 2006; “State Should Allow”, 2006).

Increase in medical cannabis debate. Changes at the local level were followed by an increase in the medical cannabis debate across the state. In the same year the Detroit ordinance was changed, a national ad campaign, “Love. The Anti-Drug”, which urged parents to take a stand against youth drug use, was launched in the city by John

Walters, director of the ONDCP (“A Talk With Drug Czar”, 2004). In May of 2005, the Detroit Free Press reported that there was again movement towards amending the state constitution to legalise the use of medical cannabis. A group called Win-The-War, headed by Bruce Ritchie, started circulating petitions for a proposal seeking to legalise general cannabis use and regulate it in the same way as alcohol (“Marijuana Petition Drive for 2006”, 2005; Range, 2005). According to news reports, the group was working on limited funds and had \$3,000 to \$4,000 available to fund the campaign. Ritchie said he hoped that they would get more funding from the MPP (Range, 2005). The group’s efforts were unsuccessful.

In 2005, Bruce Mirken from the MPP said that the U.S. Supreme Court ruling which found that federal agents could arrest medical cannabis users in the states that have legalised medical cannabis would not deter medical marijuana efforts, but would instead strengthen the movement in Michigan and other states (“Buzz Over Medical Marijuana”, 2005). The same year, House Bill HB 5470 was introduced by Rep. LaMar Lemmons III (D) in the Michigan House of Representatives. The bill sought to allow licensed physicians to prescribe small cannabis amounts to patients with debilitating medical conditions, such as cancer and glaucoma (Bell, 2006; H.R. Rep. No. 5470, 2005). The introduction of the bill saw both sides of the debate speaking out. Scott Burns, Deputy Director of the ONDCP urged the House Government Operations Committee to reject the legislation, because smoked marijuana was not safe or effective and legalising it would be bad for patients and society (Bell, 2006). Prominent medical cannabis users testified in support of the bill, but the committee took no action, letting the bill die at the end of the 2006 legislative session (Andrews, 2006; Cain, 2006). The following year, another medical cannabis bill, HB 4038, was unsuccessfully introduced to the House of Representatives. It sought to allow use of medical cannabis for

individuals with specific medical conditions, with a referral from their physician (H.R. 4038, 2007).

This was followed by a new petition by Medical and Recreational Peace (MRP) that proposed making cannabis legal for those older than 18 years, as long as they were using or growing cannabis on private property (“Marijuana Petition Drive for 2008”, 2006). Tim Beck, then the Executive Director for Michigan NORML, distanced his organisation from the MRP and said that the NORML would also try to get a proposal similar to HB 5470 on the 2008 ballot, but not in conjunction with the MRP proposal. He said the MRP proposal sought to legalise marijuana for general use and came out of nowhere (Aisner, 2006; Rook, 2006). The medical cannabis movement drew opposition from Raphael Lematrie, spokesperson for the ONDCP, who said that medical cannabis laws would not help sick individuals (D. Storey, 2007). Both proposals were unsuccessful.

Proposal 1. The opposition did not deter the newly established Michigan Coalition for Compassionate Care (MCCC), founded by Tim Beck. In May 2007 they announced the launch of the Michigan Medical Marijuana Act initiative to legalise medical cannabis in the state. Using both volunteers and paid signature collectors, the organisers planned to collect 550,000 signatures within 6 months to get the petition on the 2008 ballot (Guyette, 2007; Kozlowski, 2007). The initiative received opposition from law enforcement figures such as Ingham County Sheriff Gene Wrigglesworth, who said it was a mistake and would be difficult to enforce and regulate (Andrews, 2007a). Meanwhile, Dianne Byrum, a former state legislator, worked with the MCCC to get the measure on the ballot and discussed the benefits of medical cannabis in the media. Michigan NORML’s Executive Director Rev. Steven Thompson declined to discuss the

specifics of the MCCC initiative, but expressed his support (Andrews, 2007a; Czarnik, 2007).

Some of those using cannabis for medicinal purposes were active in sharing their stories and experiences, appearing in articles across different newspapers (Andrews, 2007a; Czarnik, 2007; Guyette, 2007). Support was also received from the former U.S. Surgeon General Joycelyn Elders and Howard J. Wooldridge, a retired police detective campaigning against prohibition. Wooldridge said that the reluctance to adopt new drug laws came mainly from the pharmaceutical industry's concern that they would suffer significant monetary loss should cannabis be legalised (Andrews, 2007a; R. E. Martin, 2007).

By November 2007, the necessary signatures were collected by the coalition (McVicar, 2007). The opposition spoke out, with Ingham County Sheriff Wriggelsworth indicating he did not support the proposal because it would require an increased police presence and open the door for general cannabis use (McVicar, 2007). State Senator Tom George (R) said that legalising smokeable cannabis would have no benefits and would make determining the right dose difficult (Killian, 2008a). Senate majority Floor Leader Alan Cropsey (R) also spoke out against the proposal. The senator believed that the legislature was unlikely to enact the law and would let the initiative go to ballot instead (Andrews, 2007b). The legislature did not enact the law and the initiative, known as Proposal 1, was set to go before voters on November 4, 2008 (Bell, 2008a). The MCCC published on their website a March 2008 poll, which found that 67 percent of Michigan voters supported removing criminal penalties for the medical use of cannabis (Michigan Coalition for Compassionate Care [MCCC], 2008).

One of the issues raised by opponents was that patients would have to obtain cannabis from someone, who would be committing a felony by selling it to them, because the proposal did not provide for a legal supply network (Citizens Research Council of Michigan, 2008; Killian, 2008b). The Michigan State Medical Society also announced that they opposed medical cannabis, except for use in controlled studies (Doty, 2008). The MDCH representative James McCurtis said that they could not legally take a stand on the proposal, but saw both sides of the argument (Roltsch, 2008).

While there were individuals speaking out in opposition of medical cannabis in the state, until September 2008 there was no specific organised group opposed to medical cannabis laws. Then, according to the State of Michigan (2008) on September 23, Citizens Protecting Michigan's Kids (CPMK) was formed. CPMK consisted of medical, law enforcement and anti-drug organisations (Leubsdorf, 2008). They were set to launch their campaign in five cities: Southfield, Lansing, Grand Rapids, Traverse City and Saginaw (Citizens Protecting Michigan's Kids [CPMK], 2008). On their webpage, CPMK declared that they were formed in order to urge voters to vote against Proposal 1 (CPMK, 2008). Michigan Court of Appeals Judge Bill Schuette spoke on behalf of the CPMK in opposition to the proposal and was supported by the Howell Chief of Police George Basar (Leubsdorf, 2008). Ron Schafer, Ionia County Prosecuting Attorney, also joined in the opposition, reasoning that the proposal had a gap which would allow people to drive under the influence of cannabis and increase danger on the roads (CPMK, 2008).

The debate intensified in October 2008 when the CPMK started airing a television advertisement showing a storefront called "Cannabis Company" and talking about the hundreds of pot-smoking clubs which opened in California after voters approved the use of medical cannabis in 1996 (Van Dussen, 2011). The announcer says

that “They grow pot there. They smoke it there in every neighbourhood just blocks from schools”. At this point, MCCC staff posted a blog on their website responding to the television advertisement which they believed was misleading, lied to the public and was just using scare tactics (MCCC, 2008a). The MCCC also started running advertisements featuring Dr George Wagoner who helped his wife by obtaining cannabis to ease her symptoms of chemotherapy (YesOnProp1, 2008). It was also reported that through to October 20 that year, the MCCC raised more than 10 times the amount Proposal 1 opponents raised, \$1.5 million to \$125, 500 (Oosting, 2008).

A memorandum was also issued to Michigan employers by Steven J. Fishman, a chair of the Workplace Law Practice Group, opposing the proposal and claiming that there was no scientific evidence that smoking cannabis was safe or effective, and that because it is not FDA approved, employers would not be able to monitor its use (Fishman, 2008). Fishman reasoned that, as Michigan was a state with a high unemployment rate and among the least attractive for business, it could not afford to have cannabis in the workplace (Fishman, 2008). MCCC spokeswoman Dianne Byrum, together with Bruce Mirken, responded to Fishman’s claims saying that the MCCC did not believe that Proposal 1 would affect workplaces (Bell, 2008b). Byrum said she was not aware of any cases of workplace problems with medical cannabis in states that have already adopted such laws. Fishman’s memorandum, however, had an impact on the Chamber of Commerce, who previously adopted a neutral position on the proposal but said Fishman’s memorandum raised significant and previously unconsidered points (Bell, 2008b; CPMK, 2008).

Less than a month before the election, Judge Bill Schuette and Michigan State Medical Society’s House of Delegates speaker Daniel Michael wrote a number of articles against Proposal 1 (Schuette & Michael, 2008a, 2008b). Similarly to the CPMK

advertisements, they suggested that California's medical cannabis law resulted in chaos and that the same would happen in Michigan should Proposal 1 be passed (Schuette & Michael, 2008a, 2008b). While claiming the proposal was bad because it did not require a prescription for cannabis, they strongly urged voters to vote no on the proposal (Schuette & Michael, 2008a). Judge Schuette and members of the Michigan Sheriff's Association also joined the deputy drug czar Scott Burns in Grand Rapids to campaign against Proposal 1, while Oakland County Sheriff Michael Bouchard, prosecutor David Gorcyca and Southfield Police Chief Joe Thomas held a press conference and spoke against the proposal (CPMK, 2008; "Deputy Drug Czar Will", 2008).

One of the more high-profile opponents, John Walters, Director of the ONDCP, went to Detroit to speak against the proposal he called the first step towards legalising drugs ("Drug Czar Visits", 2008). He said that its proponents did not have any facts but relied on the sympathy of the voting public. Following Walters's arrival, a joint statement opposing the initiative was released by a group of local law enforcement agencies (Kloosterman, 2008). The statement said that medical cannabis (a) was a Trojan horse for legalising the drug itself and making it available with disregard for scientific evidence; (b) had no scientific base; (c) was dangerous; and (d) could have a staggering effects on families and children (Kloosterman, 2008). Afterwards, Howell Police Chief George Baser encouraged voters to vote no on the proposal which he believed would lead to more people, including children, using cannabis (Totten, 2008). He said that, if the drug were truly for medical use, the proposal would include a requirement for physicians' prescription (Totten, 2008). Donald Allen, Director of the Michigan Office of Drug Control Policy, was also quoted as saying that medical cannabis was not in the public health interest (Satyanarayana, 2008a).

In response to the opposition's comments, Dianne Byrum presented the argument that cannabis legalisation was not the goal of Proposal 1 but providing options for patients in pain (Totten, 2008). Campaigners such as Dr. George F. Wagoner and Reverend Steve Thompson of Benzie County NORML wrote to different newspapers relating experiences with medical cannabis and voicing support for the initiative (Wagoner, 2008a, 2008b). Thompson alleged that CPMK only posted half-truths and said it was not clear who stood behind them. In response to claims that legalising medical cannabis was just a step towards legalising cannabis in general, Thompson said that the NORML wanted the drug completely legalised, for both recreational and medical use, and that was why they took a back seat to the MCCC, whose goal was legalisation for medical purposes only (Coates, 2008).

In October, CPMK spokespersons stopped in Battle Creek to speak against Proposal 1, calling the initiative preposterous and a con ("Medical Marijuana a Hot Issue", 2008). Following the group's visit to Battle Creek, David Headings from the Battle Creek Police Department and Al Byam, Sheriff of Calhoun County, wrote a letter to the Battle Creek Enquirer, strongly opposing medical cannabis (Headings & Byam, 2008). They said that the initiative could make drugs available to children under the guise of medical use and that advocates of cannabis legalisation played on people's emotions by presenting cases of sick patients who have benefited from the use of the drug (Headings & Byam, 2008).

While the MDCH previously took no stance on the medical cannabis issue, at the end of October, Janet Olszewski, the department's director, stated in the Detroit Free Press that legalising cannabis for medical purposes was not the right answer for treating pain (Olszewski, 2008). She said that major public health organisations did not support medical cannabis and that there was no need for it, as Marinol (dronabinol) was

available and had medical value. According to Olszewski, the proposal had loopholes that could cause legal confusion and drug enforcement problems (Olszewski, 2008).

On October 30, prominent figures, including Macomb County Sheriff Mark Hackel and prosecutor Eric Smith, joined Bill Schuette at Macomb County to urge voters to vote against Proposal 1 (Wilczynski, 2008). Schuette said that wealthy millionaires from New York, Washington D.C., and California were spending millions to promote the medical cannabis initiative, with the aim ultimately being general cannabis legalisation (Wilczynski, 2008). Matt Resch, spokesman for the CPMK, said the opposition was slow to start their campaign, but were busy in October airing television commercials (Bell, 2008c).

At the start of November, the Detroit Free Press indicated the polls showed strong support for the proposal (Bell, 2008c). Debates over the issue were evident across newspapers leading up to the election, with both supporters and opponents presenting their views (Panian, 2008; Satyanarayana, 2008b). Then, on November 4, 2008, voters passed the proposal (Michigan Department of State, 2008a). The information from the Department of State showed that Proposal 1 received majority 'yes' votes in every one of the 83 Michigan counties; 3,006,820 (62.7%) voted in favour of the proposal and 1,790,889 (37.3%) voted against (Michigan Department of State, 2008a).

Funding. On Tuesday, November 4, 2008, the co-chairs of CPMK Judge Bill Schuette and Jim Barrett released a statement on CPMK's website following the passing of Proposal 1, stating that the organisation campaigned on a limited budget (CPMK, 2008). This section will outline the funds and expenditures for both MCCC and CPMK

during 2008 and the election cycle, as reported in the Michigan Department of State documents.

The documents indicated that, in 2008, MCCC processed 99 separate donations, yielding a total of \$69,563.48 (Michigan Department of State, 2008b). The MPP made 12 separate donations, totalling \$67,475.84 for 2008, and a cumulated total of \$1,240,460.07 worth of donations for the election cycle. In 2008, MCCC spent a total of \$36,159.35; a large proportion of which was spent on political consultations and legal fees. Examples of other expenses included printing, signature verification, federal taxes, state taxes, and classified advertisements in the Flint Journal and the Kalamazoo Gazette. Total MCCC expenditures for the election cycle cumulated to \$1,105,927.04.

According to the Michigan State documents, CPMK was officially formed on September 23, 2008 (Michigan Department of State, 2008c). From October 21, 2008 to November 24, 2008, the CPMK received \$184,030.71 worth of donations and a cumulative total of \$309,520.71 for the election period. Major donators to CPMK included the presidents of Alticor and R.D.V. Sports; Richard M. DeVos, a businessman; Save Our Society from Drugs; Robert Thompson, a retiree; the Dow Chemical Corporation; and DTE Political Action committee. On October 7, 2008, Michigan Health and Hospital Association donated \$100,000. Total expenditures from October 21, 2008 to November 24, 2008 were \$215,288.69, with a cumulative total of \$276,632.11 for the election period. In total, CPMK spent \$198,596.58 for media and television advertising and approximately \$5,265 on consulting services (Michigan Department of State, 2008c).

Post-Proposal 1. After the law was passed, the Bureau of Health Professionals, under the MDCH, had 120 days to draft and finalise rules for the medical cannabis

program (Kinstle, 2008). The registry program was to be completed by April 14, 2009. However, questions were raised regarding the new law's so called vague language and how cannabis was to be obtained by patients (Merion, 2008). Dianne Byrum attempted to dispute the concerns regarding the law and stated it was well structured, well written and very limited (Merion, 2008).

In January of 2009, the first draft of rules for the medical cannabis program, created by the MDCH, resulted in protests from patients and medical cannabis advocates (McNamara, 2009). They argued that the MDCH was, in some instances, contradicting the law passed by voters by seeking to restrict access to medical cannabis. Karen O'Keefe, a lawyer for the MPP, said the MDCH was overstepping its boundaries and took the draft rules further than it was assigned to do. According to O'Keefe, the department was only given the duty of setting up a patient registry and overseeing the list of diseases that would allow patients to register for the medical cannabis program (McNamara, 2009).

The Michigan medical cannabis law received criticism from Judge Robert Turner who said it was the worst legislation he had seen, after he dismissed felony charges against a couple who were charged with intent to manufacture cannabis ("People v. Redden," 2010). The couple had their physician's letter of recommendation but did not possess the MDCH issued ID cards, which were due to be issued five days after the couple's arrest. Their lawyers argued that physician recommendation was sufficient grounds for cannabis use while the prosecution contended that defendants were required to abstain from cannabis use until they were able to obtain an identification card and that they did not have a bona fide physician-patient relationship with their doctor. Defendants argued that the plain language of the medical cannabis act did not require possession of a card ("People v. Redden," 2010). Judge Turner said the

medical cannabis law was ambiguous, as it did not specify the exact amount of cannabis a registered patient was allowed to possess, leaving judges to determine what a reasonable amount was. In 2010, the Michigan Court of Appeals affirmed the circuit court's decision to reinstate the charges against the defendants, but Judge Peter D. O'Connell also wrote:

No system of regulation can succeed without a clear set of rules. Those wishing to use marijuana need to know when, how, and under what conditions they can legally do so. Providers need to know under what conditions they can legally grow, harvest, and distribute their product, and the operators of the new medical-marijuana clinics that appear to be springing up on every corner need to know if they are in fact set up to dispense marijuana to the public legally (para.223).

The confusion regarding the law resulted in local governments passing their own ordinances, to accommodate or restrict medical cannabis dispensaries (Bukowski, 2010; Householder & Martin, 2010; Steber, 2013). However, this resulted in inconsistencies in local laws, some of which also conflicted with the interpretations of the medical cannabis act (Steber, 2013). Steber (2013) suggested that political preferences of the municipalities also played a role in influencing local laws regarding medical cannabis, as it appears that the more liberal cities were permitting medical cannabis dispensaries and were more likely to facilitate patients' access to medical cannabis.

During the 2011-2012 legislative session, the Michigan legislature passed six bills amending the state's medical cannabis act (MPP, 2014). House Bill 4856 (2012) was passed to amend the medical cannabis act for medical cannabis patients and caregivers to keep cannabis in a case in the trunk of their vehicle or enclosed in a case that is not readily accessible if the vehicle does not have a trunk, when transporting

cannabis. House Bill 4834 (2011) provided that patients and caregivers will need to renew their registry cards every two years. House Bill 4851 (2011) requires doctors who recommend cannabis to patients to first establish a “bona fide physician-patient relationship” by the doctor reviewing the patient’s medical records and completing a full assessment of the patient’s medical history, creating and maintaining records of the patient’s condition, having an expectation that they will provide follow-up care, and notifying the patient’s primary care physician of the patient’s condition and use of medical cannabis. The bill also changes the definition of “enclosed, locked facility” where patients can grow cannabis to say that it must be “stationary” and “fully enclosed”. The bill also permits outdoor cultivation as long as the plants are not visible from adjacent property and are grown in a stationary and enclosed structure. The other House Bill 4853 (2011) applied the state’s criminal sentencing guidelines to the crime prohibited by the original act. The two senate bills passed during the 2011-2012 legislative session specified that medical cannabis or related expenses are not required to be covered by insurance companies and that employers are not required to reimburse their employees for medical cannabis treatment (MPP, 2014). There are currently 30 pending bills related to medical cannabis in the state’s legislature (MPP, 2014).

New Mexico

New Mexico’s attempts to legalise medical cannabis were successful in 2007, when, on March 13, Gov. Bill Richardson, a Democrat, became the first governor in history to enact a medical cannabis law while running for the presidency (Lynn and Erin Compassionate Use Act, 2007; MPP, 2013). He signed SB 523, known as the “Lynn and Erin Compassionate Use Act”, into law, making New Mexico the 12th state to allow medical cannabis use for qualifying patients. The House of Representatives approved the bill by a 36-31 vote, while the Senate approved it 32-3. The bill took effect on July

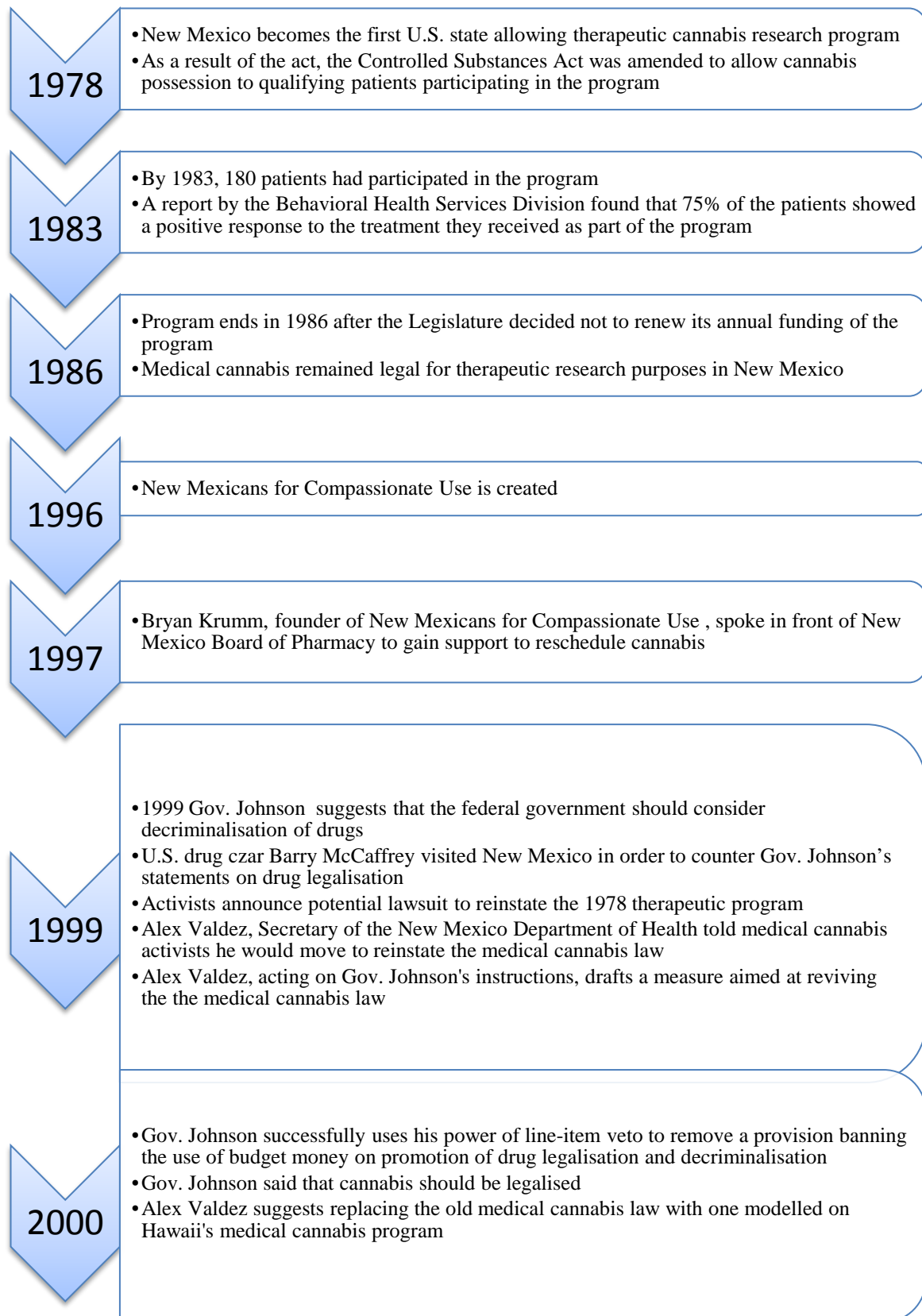
1, 2007. The New Mexico Department of Health (NMDH) finalised the rules for the medical cannabis program in January 2009. The New Mexico legislature also passed a non-binding resolution which urged the federal government to allow doctors to prescribe cannabis to patients. The resolution did not change the state policy, but was significant because it officially stated the legislature's position on the issue (MPP, 2013).

Not all of the currently included debilitating medical conditions were included in the original bill. Following amendments in January and April of 2009, the following conditions were specified as enabling patients to qualify for the New Mexico medical cannabis program: severe chronic pain; painful peripheral neuropathy, intractable nausea/vomiting; severe anorexia/cachexia; hepatitis C infection currently receiving antiviral treatment; Crohn's disease; Post-traumatic Stress Disorder; Amyotrophic Lateral Sclerosis (Lou Gehrig's disease); cancer; glaucoma; multiple sclerosis; damage to the nervous tissue of the spinal cord with intractable spasticity; epilepsy; HIV/AIDS; inflammatory autoimmune-mediated arthritis; hospice patients; and any other condition subject to approval by the NMDH (Lynn and Erin Compassionate Use Act, 2007; MPP, 2013). In order to qualify, patients have to be residents of New Mexico, and be diagnosed by a medical practitioner as having one or more of the specified debilitating medical conditions, including a statement from their practitioner that, in their opinion, the potential health benefits of using medical cannabis would outweigh the health risks for the patient. The length of New Mexico residency before a patient can apply for participation in the program is not specified. The practitioners are exempt from arrest or prosecution for recommending medical cannabis to a patient with specified medical conditions (Lynn and Erin Compassionate Use Act, 2007).

The NMDH is responsible for issuing identification cards to eligible patients and caregivers (Lynn and Erin Compassionate Use Act, 2007). Patients may legally possess six ounces of usable medical cannabis, four mature plants and 12 seedlings. However, if they have their physician's approval, patients can apply to the Medical Advisory Board to possess more than 6 ounces of useable cannabis. State regulations also authorised non-profit facilities to apply to produce and dispense medical cannabis, with state licensed producers permitted to grow up to 95 mature plants at one time (Lynn and Erin Compassionate Use Act, 2007; New Mexico Register, 2008). At the state level, patients are also able to use a medical necessity defence, should they be prosecuted for an offence involving cannabis, as long as they are in possession of no more than the necessary amount of cannabis needed to relieve their pain and ensure an uninterrupted supply of the drug. The defence is not limited to registered patients only, and while it does not protect a patient from arrest, it requires the charges to be dropped if the specified conditions are met (Lynn and Erin Compassionate Use Act, 2007).

New Mexico's law was the first in the country to specifically instruct the state to develop and implement a cannabis production and distribution system, in order to assist patients in obtaining the drug (Lynn and Erin Compassionate Use Act, 2007; MPP, 2013). This meant that patients could register to grow their own cannabis, or non-profit businesses wanting to produce and distribute the drug could apply for their licence through the NMDH. A Medical Advisory Committee consisting of eight medical professionals was also created, to assist the NMDH with program development and give advice on rules governing the Medical Cannabis Program ("Local Doctors", 2007; New Mexico Department of Health [NMDH], 2007b). The committee is required to meet at least twice a year to hold public hearings and evaluate patients' petitions to add conditions to the list of qualifying medical conditions.

In the following section, Figure 3 will chronologically outline the history of medical cannabis in New Mexico, followed by a chronological description of the process that took place before the Lynn and Erin Compassionate Use Act was passed.



2001

- The Drug Policy Advisory Group, created by Gov. Johnson, recommends the reform of the Lynn Pierson Act to allow for patient access to medical cannabis
- The group recommends New Mexico's medical cannabis law should be modelled on Oregon and Hawaii's program
- Reports that the advisory group was created by Gov. Johnson using private money
- Reports that Gov. Johnson plans to propose eight drug-reform bills to the state Legislature, including decriminalisation of possession of small cannabis amounts, and legalising cannabis use for medical purposes
- Opposition vocal in the media, saying Gov. Johnson is sending a bad message to people
- NORML begins airing radio advertisements supporting drug law changes
- Two medical cannabis bills introduced, one in the House of representatives and one in the Senate
- Opposition lobbying lawmakers to reject some of Gov. Johnson's drug reform bills
- Poll finds that 61% of participants support medical cannabis

2002

- Following Supreme Court ruling, Gov. Johnson waters down a medical cannabis bill from previous versions
- New medical cannabis bill introduced in the Senate by Sen. Maes
- The bill's proposition that patients should grow and dispense cannabis draws criticism
- NMDH spokesperson supports cannabis as a medicine

2003

- Compassionate Use Medical Cannabis bill introduced again and defeated in the House of Representatives
- Gov. Johnson replaced by Gov. Richardson

2005

- Sen. McSorley announces that he would sponsor a medical cannabis bill
- Media reports that the pharmaceutical industry contributed more than \$97,000 to New Mexico political campaigns
- Legislative support for medical cannabis decreased since Gov. Johnson was replaced by Gov. Richardson
- Senate passes three medical cannabis bills
- Gov. Richardson says that if the House passes a medical cannabis bill he would sign it

2006

- Gov. Richardson announces he would include a medical cannabis bill on his agenda
- House Speaker asks the governor not to include the bill on his agenda as there is not enough time for it to be heard
- Another medical cannabis bill introduced in Senate by Sen. McSorley; legislative session ended before the bill could get a house floor vote
- Patients speak in support of the medical cannabis bill

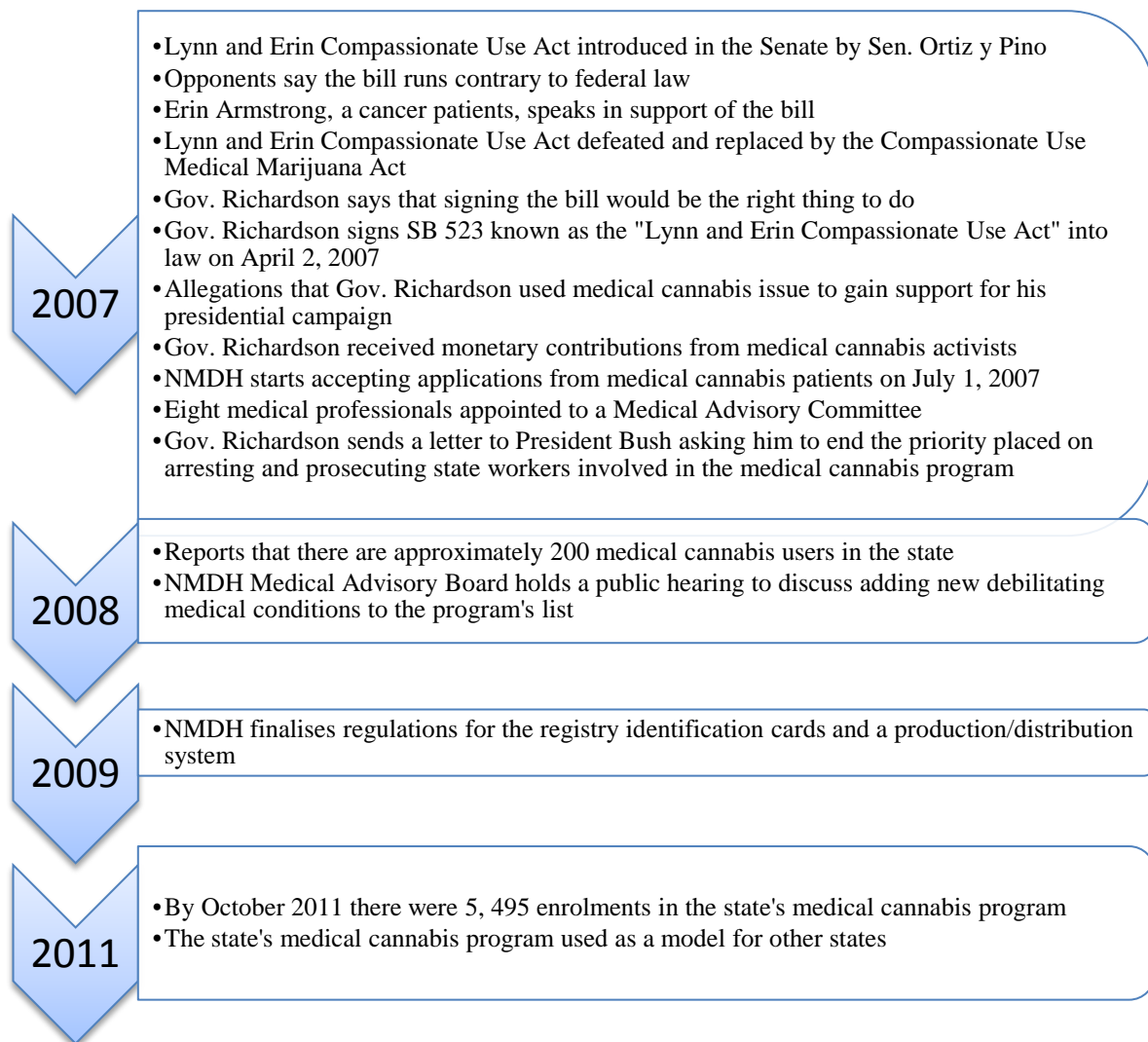


Figure 3. Time chart of medical cannabis history in New Mexico.

2007 Lynn and Erin Compassionate Use Act: Chronological account. In

1978, New Mexico was the first U.S. state to pass a law allowing a therapeutic cannabis research program, which involved receiving cannabis supplies from the federal government (Behavioral Health Services Division [BHSD], 1983). The act was passed by the Legislature, and was renamed in 1979 the Lynn Pierson Therapeutic Research Program (LPTRP), in honour of Lynn Pierson, a cancer patient, who lobbied for medical cannabis in New Mexico. It was administered by the then Health and Environment Department, run through the University of New Mexico, and sought to

provide cannabis and delta-9-THC to cancer chemotherapy patients suffering from nausea and vomiting caused by their therapy (BHSD, 1983). As a result of the act, the Controlled Substances Act was amended to allow cannabis possession to qualifying patients participating in the LPTRP. However, due to federal law superseding state law, starting the LPTRP required approval from the FDA, the DEA, and the NIDA. After these agencies approved the program, the first shipment of the required drugs arrived and the program began in January 1979 (BHSD, 1983).

By 1983, 180 patients had participated in the program, and another 51 applied but did not enter it (BHSD, 1983). Half of the patients were administered cannabis, which was inhaled; the other half received delta-9-THC, which was ingested in capsule form. A report by the Behavioral Health Services Division found that 75 percent of the patients showed a positive response to the treatment they received as part of the program, with inhalation found to be superior to ingestion. The report noted that the LPTRP implementation was successful, with no recorded misuse or abuse of the drug, and no problems with approving patients for participation (BHSD, 1983).

Despite its reported success in treating patients, the LPTRP ended in 1986 after the Legislature decided not to renew its annual funding of the program (Jadrnak, 1999; T. Smith, 1997). Even though the program became defunct, medical cannabis remained legal for therapeutic research purposes in New Mexico, although this was largely symbolic and no therapeutic research program has been run since 1986. Since it ended, medical cannabis advocates have attempted to revive the LPTRP, first through the Board of Pharmacy, and then, as of 2001, in the State Legislature (Baker, 2006).

After the LPTRP became defunct in 1986, no significant efforts to revive it were noted until, in 1997, Bryan Krumm, founder of New Mexicans for Compassionate Use,

was set to address the New Mexico Board of Pharmacy at their monthly public meeting seeking assistance to re-assign cannabis to Schedule II (T. Smith, 1997). New Mexicans for Compassionate Use was created in 1996, with the aim of make changes to cannabis' status at the state level, making it more accessible to people who need it. Krumm said that he was hoping to get Gov. Gary Johnson (R) to introduce law changes at the next legislative session, in order to reclassify cannabis. However, Richard W. Thompson, the board's executive director, said that there was little chance medical cannabis would become legal in New Mexico in the near future (T. Smith, 1997). Thompson said that legalising cannabis was unnecessary as Marinol was already available although Krumm said that he did not think Marinol worked as well as cannabis. Krumm also suggested that it was the pharmaceutical companies who stood in the way of legalising medical use of cannabis, for fear of profit loss. Jerry Montoya, chief drug inspector for the Board of Pharmacy, disagreed with this statement and claimed that pharmaceutical companies make most of their money on anti-depressants (T. Smith, 1997).

In 1999 Gov. Johnson admitted to using cannabis and cocaine while in college, and suggested the Federal Government should consider decriminalisation of drugs (Janofsky, 1999). He said that the campaign against drugs had left courts and prisons overwhelmed. Gov. Johnson's statements were considered controversial and drew criticism from both sides, including the ONDCP. In October of 1999, U.S. drug Czar Barry McCaffrey visited New Mexico in order to counter Gov. Johnson's statements on drug legalisation and Gov. Johnson said that he did not expect much support from law enforcement organisations ("Drug Debate Fizzled", 1999; Janofsky, 1999). While his views got him national attention, it was suggested in the media that Gov. Johnson's past office record countered his drug legalisation views, as he had previously consistently

vetoed such programs when they were presented to him by the legislature (“Drug Debate Fizzled”, 1999).

The same year, Bryan Krumm and Ed McWilliams were announced in the media as potential plaintiffs in a class-action lawsuit, requesting that the 1978 medical cannabis program be reinstated (Jadrnak, 1999). In October of 1999, Alex Valdez, secretary of the NMDH, told the medical cannabis activists he would move to reinstate the program, and they delayed filing the lawsuit. He said that the program was not his priority for the fiscal year budget, but he was informed by the DEA about what federal requirements he must fulfil to reinstate the program. According to Jadrnak (1999), Valdez stated he wanted to make it clear that his interest in the medical cannabis program was not related to Gov. Johnson’s discussion on cannabis legalisation, as he did not want people to think medical cannabis was the first step to general legalisation of the drug.

In November of the same year, Alex Valdez, acting on Gov. Johnson’s instructions, drafted a measure aimed at reviving the 1978 medical cannabis law (“Legislature to Study”, 1999). Allegedly, Valdez started studying the law after threats of a class-action lawsuit. Earlier in the month, Valdez was sued by attorney Charlie Knoblauch on behalf of Tony Cognetto, for not providing his sick client with cannabis. Bryan Krumm and Ed McWilliams also threatened to sue. It was alleged that it was the governor who pushed Valdez towards reviving the medical cannabis program, after he said it was not going to be his priority (“Legislature to Study”, 1999).

The following year, Gov. Johnson successfully used his power of line-item veto (deleting a particular provision of a bill enacted by legislature) to remove a provision banning the use of budget money on promotion of drug legalisation and

decriminalisation (Fecteau, 2000a; Watts, 2010). He said that removing criminal penalties from drugs such as cannabis and heroin would reduce drug use because it would allow for the substance to be controlled, regulated and taxed. The governor also pledged to continue to push for a public debate on drug-related issues until the end of his time as a governor, despite the fact he was aware his popularity would decline as a result (“60 Minutes to Air”, 2000; Fecteau, 2000a). He was also to discuss drug reform and legalisation of some drugs on CBS’s “60 Minutes” program (“60 Minutes to Air”, 2000).

Following the airing of the “60 Minutes” program with Gov. Johnson, in which he advocated legalisation of both cannabis and heroin, the governor said that he thought cannabis should be legalised, and that he intended to support general cannabis legalisation even after he left office (Fecteau, 2000b). The governor said his opinion had changed since he filmed the “60 Minutes” program in December of 1999 and said that talking about heroin scared people, which led him to decide to separate the two drugs and only focus on cannabis legalisation (Fecteau, 2000b). Alex Valdez also spoke in support of medical cannabis and suggested the state replace its old medical cannabis law with one modelled on Hawaii’s medical cannabis program (Fecteau, 2000c).

In 2001, the Drug Policy Advisory Group, created by Gov. Johnson, recommended the reform of the Lynn Pierson Act to allow for patient access to medical cannabis for people with serious medical conditions for which it has been shown to decrease pain and suffering (New Mexico Governor's Drug Policy Advisory Group, 2001). The report stated that since the act was enacted in 1979 the medical appropriateness of cannabis has been established for a variety of medical conditions and that many states have enacted medical cannabis laws. The group recommended that New Mexico’s program be modelled on Oregon and Hawaii’s programs. The group also

recommended amendment of existing criminal statutes to remove the criminal penalty for personal possession of cannabis and to allow for civil penalties, rather than criminal penalties, for use of cannabis in public places (New Mexico Governor's Drug Policy Advisory Group, 2001). According to a newspaper article, the advisory group was created by Gov. Johnson using private money (Mahesh, 2001a).

In January of 2001 it was reported that, after recommendations from the Drug Policy Advisory Group, Gov. Johnson planned to propose eight drug-reform bills to the state Legislature, including decriminalisation of possession of small cannabis amounts, and legalising cannabis use for medical purposes (McClannahan, 2001). State Rep. Ron Godbey (R) spoke in opposition and said that he thought Gov. Johnson would send a bad message to people and that he was appalled at what the governor was trying to do. Rep. Godfrey said he was especially concerned with the push to legalise cannabis for medical purposes, as other medicines that could be used in its place were already available. He also expressed his belief that the push for medical cannabis legalisation did not come from the medical community, but from the “druggies” (McClannahan, 2001). Rep. Ted Hobbs (R) also opposed medical cannabis and said that it was a step towards general legalisation. Matt Sandoval, president of the New Mexico District Attorneys Association, said that the proposal amounted to legalisation and would lead to higher drug use (Mahesh, 2001a).

Senator (Sen.) Cisco McSorley (D) and Rep. Joseph Thompson (R) agreed to sponsor two cannabis-related bills proposed by Gov. Johnson (Mahesh, 2001b). Sen. McSorley, together with Sen. Roman Maes (D), were to introduce Senate Bill 315, a medical cannabis bill allowing cannabis use for people with specific medical conditions, while Rep. Thompson was to introduce House Bill 431 in the House of Representatives (H.R. 431, 2001; Mahesh, 2001b; S.B. 315, 2001). Thompson said he did not find a

House co-sponsor for his medical cannabis bill, but that, at that point, a lot of representatives indicated they would vote for it. McSorley also agreed to sponsor a bill which aimed to decriminalise possession of up to an ounce of cannabis for personal use (Mahesh, 2001c). Around the same time, the NORML began airing radio advertisements in support of the drug law changes (NORML, 2014b). The two week campaign of radio spots was intended to help build support for Gov. Johnson's call to legalise cannabis and ran approximately 150 times on two Albuquerque stations and one Santa Fe station (NORML, 2014b).

Two medical cannabis bills, part of Gov. Johnson's drug-reform package, were approved by Senate Committees in February of 2001, despite some law enforcement groups voicing their disapproval (Terrell, 2001). Senate Bill 315 (2001) then cleared the Senate on a 29-12 vote, and was due to be considered by the House. In March, House Bill 431 (2001), sponsored by Rep. Joe Thompson, cleared the house by a 35-32 vote. While the bill proposed to make cannabis available to those suffering from cancer, HIV/AIDs, glaucoma, neuro-muscular conditions, and other severely debilitating illnesses, it also included a sunset provision, which meant that, if passed, it would expire on July 1, 2005, when the legislature would have had the option of extending it (Mahesh, 2001d).

Thirteenth Judicial District Attorney, Lemuel Martinez, said members of the New Mexico District Attorneys Association were lobbying lawmakers and testifying before the Legislature to reject some of Gov. Johnson's drug reform bills (Pawloski, 2001). Reasons Martinez gave for opposing Gov. Johnson's proposals included sending a negative message to children, an increase in cannabis-impaired drivers on the streets, and disadvantaging those trying to complete drug rehabilitation programs by "undermining incarceration" (i.e. removing the threat of incarceration which the drug

courts often use as a threat to those who do not comply with the “rehabilitation” program). Katherine Huffman, director of the New Mexico Drug Policy Project of the Lindesmith Center (now the Drug Policy Alliance), disagreed with Martinez’s claims, and said the bill would not legalise cannabis for everyone (Pawloski, 2001).

In March 2001, a study was commissioned by the Lindesmith Center, and was conducted by Research and Polling, Inc. (Research and Polling, 2001). As part of the study, 504 registered voters in New Mexico were randomly selected and interviewed over the telephone about their attitudes and opinions on issues relating to drug use and drug laws in New Mexico. The study found that 61 percent of participants strongly supported making cannabis available to seriously ill or terminal patients, while 17 percent somewhat supported the idea (Research and Polling, 2001).

Meanwhile, Gov. Johnson continued to promote his proposals, and spoke at the annual NORML convention, where he vowed to keep fighting for drug law reform in New Mexico (Coleman, 2001). He also spoke at the Lindesmith Center’s international conference at Albuquerque about cannabis legalisation (Jojola, 2001). Governor Johnson said cannabis legalisation was needed, as well as a move from a criminal model to a medical model approach to drug-related issues. Ethan Nadelmann, the Lindesmith Center’s executive director, praised the governor and his commitment to the drug reform issue (Jojola, 2001).

When three out of his eight drug-reform bills died during 2001, Gov. Johnson said he would not give up and would introduce more drug-reform legislation in 2002 (B. Smith, 2001). His views continued to cause controversy and raised questions over why Gov. Johnson did not make his position on drug use clear until his second term as a governor (Zeleny, 2001). However, when Gov. Johnson made his position on drug use

clear his approval rating dropped by 11 points and three members of his administration's anti-drug task force resigned. There was also a political aspect to the debate and a newspaper article quoted a professor of political science at the University of New Mexico who said the Democrats used the controversy Gov. Johnson's views created to paint the Republicans as being pro-vice and pro-sin (Zeleny, 2001). In October of 2001, Gov. Johnson spoke at a forum along with former Gov. Toney Anaya (D), who was paid by the Lindesmith Center to lobby for Gov. Johnson's drug reform package before the legislature (B. Smith, 2001). According to Anaya, some Democrats in the Legislature did not support Gov. Johnson's bills because they were proposed by a Republican governor (B. Smith, 2001).

After the 2001 medical cannabis bills failed to clear both houses, and following the Supreme Court decision which ruled that patients can still be arrested under federal law even if their state allows the use of medical cannabis, Gov. Johnson watered down a medical cannabis bill from previous versions (B. Smith, 2002). The 2001 bill proposed that the NMDH should grow and distribute cannabis for qualifying patients (Compassionate Use Medical Cannabis Act, 2002). This provision was removed in the 2002 bill, and introduced in the Senate by Sen. Roman Maes (D) as the Compassionate Use Medical Cannabis Act (2002). Lawmakers on the Senate committee considered the bill, but disagreed about who should grow and dispense cannabis. The bill's proposition that patients should grow their own cannabis drew criticism from lawmakers who feared some patients may abuse this (Mahesh, 2002). Some senators, such as Sen. Mary Jane Garcia (D), said they would prefer physicians to prescribe cannabis to patients, instead of patients growing their own. The committee members therefore voted 6-2 to amend the bill to remove the provision allowing patients to grow cannabis, while Sen. Rod

Adair (R) recommended having a state agency or a university grow and distribute the drug (Mahesh, 2002).

After the bill was introduced, Steve Jenison, from the NMDH, suggested cannabis could effectively be used as a medicine in certain cases, in place of other medications that people do not find beneficial (Jenison, 2002). Jenison stated that he supported cannabis use for certain debilitating medical conditions, and therefore supported the Compassionate Use Medical Cannabis bill which was introduced by Sen. Roman Maes (D). He also responded to claims that medical cannabis is unnecessary as Marinol was already available by saying that Marinol did not help some individuals, while smoking small amounts of cannabis did. Jenison encouraged people to support the bill and said a distinction had to be made between cannabis as a medicine and as a recreational drug (Jenison, 2002). The bill was not successful and was introduced again in 2003 and defeated in the House of Representatives by a 46-20 vote ("Medical Marijuana Bill Fails in New Mexico", 2003). District attorneys and law enforcement groups opposed the medical cannabis proposal and Lemuel Martinez, president of the New Mexico District Attorneys Association, said he expected the group to continue opposing medical cannabis use (Massey, 2005).

In 2005, Sen. Cisco McSorley (D) sponsored the Lynn Pierson Compassionate Use Act (2005), which included a provision whereby the NMDH would oversee a program providing cannabis to qualifying patients. Senator McSorley said that no lawmaker ever lost their seat because of the medical cannabis issue, and they should therefore not fear to vote for it (Massey, 2005). In March 2005, the Senate passed Sen. McSorley's bill and two other medical cannabis bills, each of them establishing a program run by the state NDMH (Compassionate Use Medical Marijuana Act, 2005; Lynn Pierson Compassionate Use Act, 2005; Medical Therapeutic Use of Cannabis Act,

2005). Senator Steve Komadina (R) sponsored the Medical Therapeutic Use of Cannabis Act (2005) which required cannabis to be of pharmaceutical grade in order to obtain a consistent and regulated dosage. However, smoking of the drug was to be ruled out. The Compassionate Use Medical Marijuana Act (2005) was sponsored by Sen. Shannon Robinson (D) and sought to allow people with specific medical conditions to use cannabis topically, such as in patches and creams. Senator Robinson and Sen. Komadina's bills did not contain a medical necessity provision and did not provide for patients to grow their own cannabis (Compassionate Use Medical Marijuana Act, 2005; Medical Therapeutic Use of Cannabis Act, 2005). The opposition raised questions over the sort of message that would be sent out to children if any of the bills were passed (Baker, 2005).

Governor Richardson, who succeeded Gov. Johnson in 2003, said that if the House passed a medical cannabis bill, he would sign it. While the pharmaceutical industry had not been visible active in opposing medical cannabis legislation, the New Mexican newspaper reported that in 2002 the pharmaceutical industry contributed more than \$97,000 to New Mexico political campaigns, including \$40,000 to new Governor Bill Richardson (Terrell, 2005a). The more visible opposition came from law enforcement, with Mike Bowen, a lobbyist for police organisations, saying his organisation would most likely oppose the 2005 medical cannabis bills, mainly because they were against federal law, and there were not enough controls in them (Terrell, 2005a). It was also noted that the legislative support for medical cannabis appeared to have decreased since Gov. Johnson was no longer the governor (Terrell, 2005a).

All three medical cannabis bills passed through the Senate with bipartisan approval, and were sent to the House of Representatives (Terrell, 2005b). Sen. McSorley's (D) bill passed on a 27-11 vote; Sen. Komadina's (R) bill passed on a 29-11

vote; and Sen. Robinson's (D) bill was passed on a 31-9 vote (Terrell, 2005b). Two patients with debilitating medical conditions, Essie Debonet and Erin Armstrong were constantly present at the House session in order to hear the medical cannabis bills being discussed (Andersen, 2005). Erin Armstrong, a cancer survivor and the daughter of state Aging and Long-Term Services secretary, Debbie Armstrong, also spoke in support of medical cannabis, and described her struggle with cancer and the cost of her treatments (Massey, 2005; Terrell, 2005a).

The bill introduced by Sen. McSorley, the chairman of the Judicial Committee, was due to be heard, but was stalled due to a dispute involving an unrelated bill. It was alleged that Rep. Dan Silva (D) experienced difficulties getting his bill heard in the Senate Judiciary Committee, and therefore tried to delay the medical cannabis bill (Terrell, 2005c). McSorley said Silva believed his bill was more important than others, and said he would not give special consideration to legislation in order to have his own bill passed. Representative Henry Saavedra (D) carried the bill for McSorley in the House, but was also a co-sponsor of Silva's bill (Terrell, 2005c).

This resulted in some controversy, and the bill did not end up passing the House (Polly, 2005). It was sitting for days on the House calendar, until its supporters attempted to pass it in the last minutes of the House session (Terrell, 2005d). The bill was stopped by House Speaker Ben Lujan (D), who said the bill was too controversial, would need a three-hour debate, and there was not enough time to discuss it before the session's end (Polly, 2005; Terrell, 2005d). It was also alleged that Rep. Henry Saavedra, who carried the bill in the House, asked for it to be passed over (Terrell, 2005d). Reena Szczepanski, director of New Mexico's DPA, said it was not due to lack of votes that the bill did not pass, but because it was trapped in the middle of a game. Szczepanski had been lobbying for the bill during the legislative session and said that

the legislators were sending a bad message to sick individuals by holding up the bill and not passing it, and held Rep. Silva responsible for the hold-up (Polly, 2005).

The following year, a new medical cannabis bill was due to be introduced and, according to Reena Szczepanski, Gov. Richardson received hundreds of letters from medical cannabis supporters, which the DPA believed made him consider the importance of the issue (Terrell, 2006a). Governor Richardson also announced that he would include a medical cannabis bill on his agenda for the 2006 legislative session (Terrell, 2006a). The governor said that he decided to put the bill on the agenda after speaking with many sick New Mexican patients. However, before the session started, House Speaker Rep. Ben Lujan (D) said he asked the governor not to include the bill on his agenda, as there was not enough time for it to be heard (Terrell, 2006a).

Democratic Sen. Cisco McSorley, who sponsored a failed medical cannabis bill in 2005, was sponsoring it again in 2006, making it the fifth time the legislature was considering a medical cannabis bill in six years (Tiffin, 2006). Cancer, glaucoma, multiple sclerosis, spinal cord injuries, epilepsy and HIV were included in the bill as debilitating conditions for which qualifying patients may use cannabis (Lynn Pierson Compassionate Use Act, 2006). The bill also included a provision for licensed growers certified by the state, who would provide patients with the required cannabis (Lynn Pierson Compassionate Use Act, 2006). The bill was unanimously passed by the Senate Public Affairs Committee who heard from patients with debilitating medical conditions in support of medical cannabis (Baker, 2006; Rubel, 2006; Terrell, 2006b). Erin Armstrong was also at the hearing and asked the committee to recommend the bill. The opponents who testified at the hearing were from law-enforcement. Law enforcement groups voiced their disapproval of the bill, saying it clashed with the federal law and,

according to some, passing of the bill would have led to an increase in criminal activity in the state (Tiffin, 2006).

After the bill passed the Senate on a 34-6 vote, it was sent to the House Agriculture and Water Resources Committee, which had never heard such a bill before, and was known to be generally disapproving of medical cannabis (Drug Policy Alliance [DPA], 2007; “New Mexico Medical Marijuana”, 2006). It was alleged by Rep. Joseph Cervantes (D) that the bill was sent to that specific committee in order to be killed. According to the media, one of the testimonials that the members of the committee were reportedly swayed by was that of Errol Chavez, director of the New Mexico High Intensity Drug Trafficking Area, who opposed the bill and testified that cannabis use and growth increased in California after its medical cannabis law was passed (“New Mexico Medical Marijuana”, 2006). After the bill was rejected on a 4-3 vote, the supporters successfully prompted the House Speaker Lujan (D) to pull it out of the Agriculture Committee and into the House Judiciary Committee, which subsequently passed it (DPA, 2007). However, the legislative session ended before the bill could get a house floor vote (DPA, 2007).

After many failed attempts at passing a medical cannabis bill, attempts were made again in 2007, the first of which was the Lynn and Erin Compassionate Use Act (2007a), introduced by Sen. Gerald P. Ortiz y Pino (D). The bill sought to enact and amend provisions of the Controlled Substances Act, in order to allow medical cannabis use for alleviating symptoms caused by certain debilitating medical conditions. Debilitating medical conditions included were cancer; glaucoma; multiple sclerosis; damage to the nervous tissue of the spinal cord with intractable spasticity; epilepsy; positive HIV/AIDS status; and any other medical condition as approved by the NMDH. It also provided for cannabis producers, licensed by the NMDH to produce, possess,

distribute and dispense cannabis to qualifying patients (Lynn and Erin Compassionate Use Act, 2007a).

The bill was approved by the Senate, and then sat on the House calendar for six days before it was heard (Nash, 2007). Opponents said the bill ran contrary to federal law, with several Republican representatives proposing amendments to it. At first, the vote on the bill resulted in a tie (Alba, 2007a). However, as three members were absent from the House chamber, Majority Floor Leader Ken Martinez (D) brought the measure back for a second vote. In the second round of votes, some of the members changed their original votes, and the three previously absent lawmakers cast theirs (Alba, 2007a). Reportedly, the original House vote tied at 33-33, over protests by Rep. Al Park (D) that his yes vote was not recorded (Baker, 2007a). When the measure was considered again, it lost when 33 lawmakers voted for it and 36 against (Baker, 2007a).

Representative Larry Larranga (R) spoke in opposition of the bill and said it was a way for people to obtain illegal drugs and would result in the state losing federal crime-fighting money. In response, Rep. Antonio Maestas (D), who carried the bill in the House for Ortiz y Pino (D), said none of the other states with a medical cannabis law had experienced issues with federal funding (Nash, 2007). Erin Armstrong also spoke to lawmakers and reporters in support of medical cannabis (Nash, 2007). Despite Ortiz y Pino's bill failing to pass the House, Armstrong and other advocates said they would continue working on medical cannabis measures until one was approved by the legislature (Nash, 2007). The governor said that he was also meeting with lawmakers in an effort to bring back the medical cannabis bill, which he believed it was important to pass (Baker, 2007a).

After the Senate Bill 238 Lynn and Erin Compassionate Use Act (2007a) was defeated by a 36-33 margin, it was substituted by Senate Bill 523 (2007). Originally, Senate Bill 523 was known as the Compassionate Use Medical Marijuana Act and only focused on topical use of cannabis, such as in ointments and patches. However, after Senate Bill 238 died on the House floor, Sen. Robinson (D), who sponsored the bill, agreed for his bill to become a substitute for the Lynn and Erin Compassionate Use Act (Peacock, 2007). The Senate Bill 523 was now to be known as the Lynn and Erin Compassionate Use Act. The bill proposed that, due to research showing that cannabis is effectively used in the treatment of a range of conditions, state law should make a distinction between the drug's medical and non-medical use. The medical conditions specified by the proposed act included one or more of the following: cancer; glaucoma; multiple sclerosis; damage to the nervous tissue of the spinal cord, with objective neurological indication of intractable spasticity; epilepsy; positive HIV/AIDS status; admittance into hospice care; and any other medical condition as approved by the NMDH (Lynn and Erin Compassionate Use Act, 2007b). In order to qualify for the program, patients had to be residents of New Mexico and be diagnosed by a medical practitioner to have one or more of the specified debilitating medical conditions, including a statement from their practitioner that, in their opinion, the potential health benefits of using medical cannabis would outweigh the health risks for the patient. The bill also proposed that a medical board, consisting of seven medical professionals, be appointed to assist with the program. It also included provisions for a medical necessity defence, should patients or their caregivers be prosecuted for an offence involving cannabis (Lynn and Erin Compassionate Use Act, 2007b).

The bill passed the Senate on a 32-3 vote, and cleared the House Judiciary Committee with a 10-3 vote. Once the bill went to the House, Gov. Richardson said that

he had spoken to some representatives who had previously voted against medical cannabis bills, in order to persuade them to change their minds (Peacock, 2007; Terrell, 2007a). According to media reports, Sen. Carol Leavell (R) and Sen. Rod Adair (R) voiced their disapproval of the bill, suggesting it was hard to understand and sent the wrong message. District Attorney Matthew Chandler also opposed the bill, and questioned the necessity of using cannabis as a medicine while, according to him, there was no research suggesting it was effective for terminally ill patients (Peacock, 2007). On the other hand, Rep. Keith J. Gardner (R) supported the bill as it was written, and believed it to be very controlled, with a low margin of error (Peacock, 2007).

After rejecting a medical cannabis bill a week earlier, the House passed the Lynn and Erin Compassionate Use Act with a 36-31 vote, with the bill set to return to the Senate for approval of minor amendments (Alba, 2007b; Miles, 2007). The House made an amendment to the bill to state that medical cannabis cannot be distributed within 300 feet of churches, schools, or day care centres. According to media reports, legislators raised the same arguments as they did with the previous medical cannabis bill, arguing that passing of the measure would suggest to children that lawmakers support illegal drug use (Alba, 2007b). Three representatives, John Heaton (D), James Strickler (R) and Manuel Herrera (D) questioned the bill's effectiveness, and suggested it sent the wrong message to children. In response, Rep. Antonio Maestas, who carried the bill to the House, said cannabis' effectiveness has been proven, and patients should have the right to try it (Miles, 2007). The governor said that he was busy lobbying House members to vote for the bill, as it provided much needed relief to patients with specific medical conditions (Alba, 2007b; Miles, 2007).

According to the media, as Gov. Richardson was due to sign the medical cannabis bill, he said he knew that if he was to run for president his actions could

become an issue (Baker, 2007b). However, Gov. Richardson stated that signing the bill would be the right thing to do, as it assisted people in great pain. The article suggested the White House urged Gov. Richardson not to sign the bill. Thomas Mann, a policy analyst at the Brookings Institution in Washington, said that signing the bill was not something that is done to earn great political support, as it was a very controversial issue (Baker, 2007b). Lonna Atkeson, professor of political science at the University of New Mexico agreed, and added that she was surprised at the governor's support of medical cannabis, as it was a risky move. If he were to sign the bill, Gov. Richardson would be the first ever presidential candidate to publicly support and sign medical cannabis legislation (Baker, 2007b).

On April 2, 2007, Gov. Bill Richardson signed the Lynn and Erin Compassionate Use Act into law, making New Mexico the 12th state to legalise the medical use of cannabis (Baker, 2007c; Lynn and Erin Compassionate Use Act, 2007). The law, named in part after Lynn Pierson, a medical cannabis lobbyist who lobbied for the 1978 medical cannabis research program, took effect on July 1, 2007, and included a mandate for the NMDH to set up a system to license medical cannabis providers, and distribute the cannabis to qualified patients itself (Baker, 2007c; Del Mauro, 2007a; Lynn and Erin Compassionate Use Act, 2007). Its passing was set to make New Mexico the first state in which the state NMDH distributed cannabis to qualified patients (Del Mauro, 2007a; MPP, 2013).

Before the bill was passed, Attorney General Gary King voiced his concerns and suggested that, even with the passing of the state law, cannabis would still be illegal under federal law, which would leave the state employees involved in the medical cannabis program with no protection from federal prosecution (Bacon, 2007; Del Mauro, 2007a). John Walters, the White House drug czar, had reportedly asked Gov.

Richardson not to sign the medical cannabis bill, and criticised him after he had done so, as Walters believed the law would worsen New Mexico's illegal drug use and would result in the same problems as California had been experiencing. Walters also suggested Richardson was only trying to get donations from wealthy medical cannabis advocates for his presidential campaign (Baker, 2007c).

Reena Szczepanski, from the DPA of New Mexico, who worked on getting the medical cannabis bill passed, said that she believed that Americans would stand behind Gov. Richardson as he sought the 2008 Democratic nomination, as, according to her, Americans would stand behind those who believe in providing sick patients with relief (Baker, 2007c; Parker, 2007). According to the New Mexican newspaper, in 2006 the DPA contributed \$50,000 to Gov. Richardson's campaign (Del Mauro, 2007a). Governor Richardson's campaign reporting documents, which were later brought up by those opposing medical cannabis, indicated that he received \$25, 000 from the DPA Network on the 20th of July 2006, and on 24th of July 2006 received another \$25,000 from George Soros, who has been linked to the DPA (New Mexico Secretary of State, 2007).

The NMDH started accepting applications from medical cannabis patients on July 1, 2007, in order for them to take part in the medical cannabis program (NMDH, 2007a; Parker, 2007). The law specified medical cannabis required for registered patients was to be solely obtained from an intrastate source (Lynn and Erin Compassionate Use Act, 2007). However, despite what was originally believed, Debra Busmeyer, a spokesperson for the NMDH said patients would have to obtain cannabis on their own, as the department would not be distributing the drug. The law-enforcement community disagreed with this move, as they believed there would be a problem due to lack of quality control, and the move was contrary to what was

originally discussed at the legislative session when the medical cannabis measure was passed (Del Mauro, 2007b). Reena Szczepanski said the legislation was very specific in who could obtain medical cannabis, but as the legislation did not specify where the drug would come from, patients would have to obtain it on their own. Szczepanski also said that selling the drug from shops would only confuse the issue (Parker, 2007). The legislation originally established an October 1st deadline for NMDH to form a plan for distributing medical cannabis to patients (Baker, 2007d; Parker, 2007).

As different legal implications were considered, the NMDH also consulted the New Mexico Attorney General's Office to determine the best way to proceed with medical cannabis distribution and to determine whether its employees could be federally prosecuted if the program went ahead (Baker, 2007d; NMDH, 2007a). When the bill was passed, the Attorney General did not support the plan to distribute cannabis (Bacon, 2007). In response to the department's inquiry as to the best way to proceed with implementing the second phase of the state law, the Attorney General cautioned that the NMDH and its employees involved in the medical cannabis program could be prosecuted under federal law (Baker, 2007e). He also said he would not be authorised to defend the NMDH or its employees, should prosecution occur (Baker, 2007e).

After receiving the Attorney General's advice, the NMDH decided they would not pursue the second part of the law, concerning the dispensing of medical cannabis, as they did not want to subject the department's employees to federal prosecution (Del Mauro, 2007c). It was said that King warned lawmakers during the 2007 legislative session about putting the NMDH in charge of overseeing cannabis growers and distributors. Reena Szczepanski said there were other options for production and distribution entities other than the department, such as private companies or volunteer groups, but this depended on King's further legal advice (Del Mauro, 2007c).

Meanwhile, Gov. Richardson, who was running for the Democratic presidential nomination, instructed the NMDH to continue planning for the production and distribution of cannabis by the department, as was originally planned by lawmakers (“Medical Marijuana: Drug Bust”, 2007).

Before the NMDH decided to allow patients to grow their own cannabis, the department invited various law-enforcement associations to come to a meeting discussing how to implement the new law. Reportedly, most law-enforcement associations refused to participate. Director of the State Sheriffs’ and Police Association, Jim Burelson, said that, like most other law enforcement associations, they refused to participate in the NMDH initiated meetings to discuss how to implement the new law for fear they would be legally implicated in distribution of a controlled substance (Del Mauro, 2007b). In response to criticism, Dr. Steve Jenison, medical director of New Mexico’s Medical Cannabis Program, said that even if the measure allowing state-licensed production and distribution centres was put in place, patients would still be allowed to grow their own cannabis plants (Del Mauro, 2007b).

On August 17, 2007, Gov. Richardson sent a letter to President Bush asking him to end the priority placed on arresting and prosecuting state workers involved in medical cannabis programs, as well as patients using the drug (Gallegos, 2007). He said the federal government should be trying to deal with “real criminals” and not people in pain and those trying to help them. The press release alleged that the Bush administration earlier in the year threatened to target New Mexico state officials with federal prosecution, if the proposed medical cannabis bill was passed by the legislature. According to reports, Gov. Richardson promised to defy the federal government and use available state resources to fully implement the state medical cannabis law (Gallegos, 2007). It was reported in the media that, in the states with medical cannabis laws, eight

Democratic presidential candidates pledged to stop federal raids on patients (Terrell, 2007b). Santa Fe County Commissioner Harry Montoya, a Democrat, said he was breaking party lines by opposing the medical law, which he had publicly opposed since 1997. He also mentioned it was not a secret that Gov. Richardson received \$50, 000 from the DPA (Haywood, 2007).

In July 2007, eight medical professionals were appointed to a Medical Advisory Committee, whose purpose was to help guide the new Medical Cannabis Program by advising the NMDH on rules governing the program (“Local Doctors”, 2007; NMDH, 2007b). The committee was also responsible for holding public hearings twice a year, where they evaluate patients’ petitions to add conditions to the list of qualifying medical conditions (NMDH, 2007b). However, by September 2007, it was still unclear how registered medical cannabis patients were going to obtain the drug, which they could now legally use (Vorenberg, 2007). The legislature told the NMDH to find a way to produce and distribute medical cannabis; however, as they were later advised by the Attorney General Gary King, doing so would subject the department’s employees to federal prosecution. According to reports, the legislature wanted patients to not have to grow their own cannabis or have to go to drug dealers in order to obtain the drug. Despite some of the obstacles, Alfredo Vigil, secretary of the NMDH, said the department would continue the patient certification process for as long as possible. He also said the distributions system idea was originally a way to break new ground for medical cannabis, but turned out to be impossible to put into place. According to Vigil, the only way for the department to distribute cannabis would be for the Congress to consider changing the federal law to allow for medical cannabis production (Vorenberg, 2007).

After the law took effect on July 1, 2007, by the end of September 2007, 50 patients with debilitating medical conditions had qualified for the program (Del Mauro, 2007d). New rules for the program were proposed, and the public had a chance to express their views at a hearing organised by the NMDH (Del Mauro, 2007d). The first rule concerned the patient identification card system. Under a temporary provision, expiring in October, qualifying patients and their caregivers were allowed to possess up to six ounces of cannabis, four hemp plants and three seedlings. The proposed rules aimed to change that amount to six ounces of cannabis, four hemp plants and four seedlings. The other rule concerned the Medical Advisory Board, and aimed to allow the board to approve other medical conditions to be included in the qualifying guidelines, with the health secretary having the final say (Del Mauro, 2007d).

The NMDH's Medical Advisory Board held a public hearing in Albuquerque to discuss adding new debilitating medical conditions to the medical cannabis program's list ("State to Hold Medical", 2008). The department had already started receiving petitions to add medical conditions such as Crohn's disease and hepatitis C to the list ("State to Hold Medical", 2008). It took until January 2009 for the NMDH to finalise regulations for the registry identification cards and a production/distribution system for its medical cannabis program (New Mexico Register, 2008; "State Finalizes Medical", 2009). After the amendments in January 2009 passed and more were added in February of the same year, the following are the debilitating medical conditions qualified for the NM medical cannabis program: severe chronic pain; painful peripheral neuropathy; intractable nausea/vomiting; severe anorexia/cachexia; Hepatitis C infection; Crohn's disease; Post-traumatic Stress Disorder; Amyotrophic Lateral Sclerosis (Lou Gehrig's disease); cancer; glaucoma; multiple sclerosis; damage to the nervous tissue of the

spinal cord with intractable spasticity; epilepsy; HIV/AIDS; and hospice patients (NMDH, 2009).

By November 2008, there were approximately 200 medical cannabis users in New Mexico (Riley, 2008). Reena Szczepanski said it had been difficult to make medical cannabis legal and accessible to patients. However, she said the NMDH was discussing a proposal to license patients and non-profit organisations for cannabis production and distribution. Szczepanski said the DPA was in support of the regulations but wanted to add another provision to the law (Riley, 2008). This would ensure that patients living in apartment buildings in a town with no non-profit medical cannabis distributors could have their carer grow the drug for them (Riley, 2008).

When demand for medical cannabis outpaced the supply, patients complained that the NMDH wasn't approving producers fast enough (Hamming-Green, 2010; Haywood, 2011). Patients also complained that they had trouble renewing their identification cards, issued yearly. As a result, it was reported that some patients were buying cannabis from unregulated sources (Hamming-Green, 2010; Major Holmes, 2010). Deborah Busemeyer, communications director for the NMDH, said the problems were arising due to the NMDH's rigorous screening of applicants and a long list of regulations (Hamming-Green, 2010; Korte, 2009). She also said that the process was slow because cannabis is illegal under federal law and therefore needed more consideration (Hamming-Green, 2010).

Despite the issues, by October 2011 there were 5,495 enrolments in the medical cannabis program, out of which 4,310 patients were active at that point (NMDH, 2011). There were also 25 non-profit producers licensed to sell cannabis as part of the program. The top five conditions of patient enrolment in the program, as reported by the NMDH,

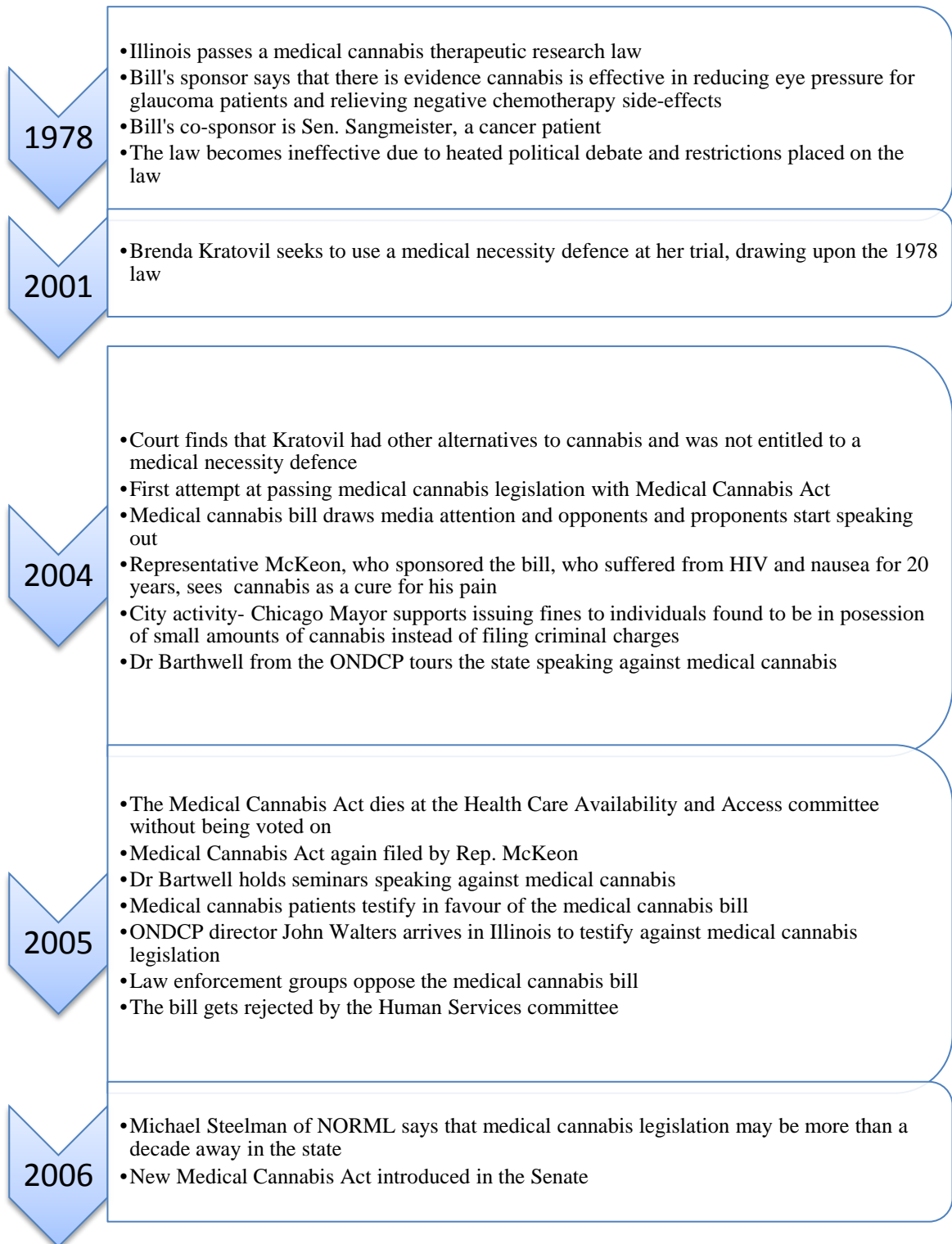
were post-traumatic stress disorder, chronic pain, cancer, painful peripheral neuropathy, and HIV/AIDS. The July-September 2011 quarterly data also showed that \$80,887.59 in taxes was collected during that period (NMDH, 2011).

A 2011 newspaper article suggested that the state's medical cannabis program was used as a model for other states (Haywood, 2011). Tamar Todd, a staff attorney for the DPA, said the combination of patient-grown and state-regulated dispensaries was ideal for patients. Todd said that state-approved dispensaries provided more assurance for patients than buying the drug from unregulated sources. Additionally, Catherine Torres, secretary of the NMDH, stated that the department planned to issue a request for proposals for a system testing the quality of cannabis supplied to patients (Haywood, 2011).

Illinois

Illinois is one of the states that has considered but not passed a medical cannabis law (MPP, 2013).⁸ It is also a state with a ballot initiative process in its constitution, but initiatives rarely appear on the state ballot due to a limited and difficult to implement process (IRI, 2009). Further, questions related to medical cannabis cannot be placed on the ballot in Illinois, as the constitution only allows for ballot initiatives changing the function or structure of the government (MPP, 2013). While there have been attempts to pass a medical cannabis law in Illinois, at the time of writing this thesis, no such bills were passed in the state. The following section will chronologically review the history of medical cannabis in Illinois (see Figure 4) and discuss the attempts made at passing medical cannabis legislation.

⁸ Illinois passed a medical cannabis law on August 1, 2013, after this thesis was submitted.



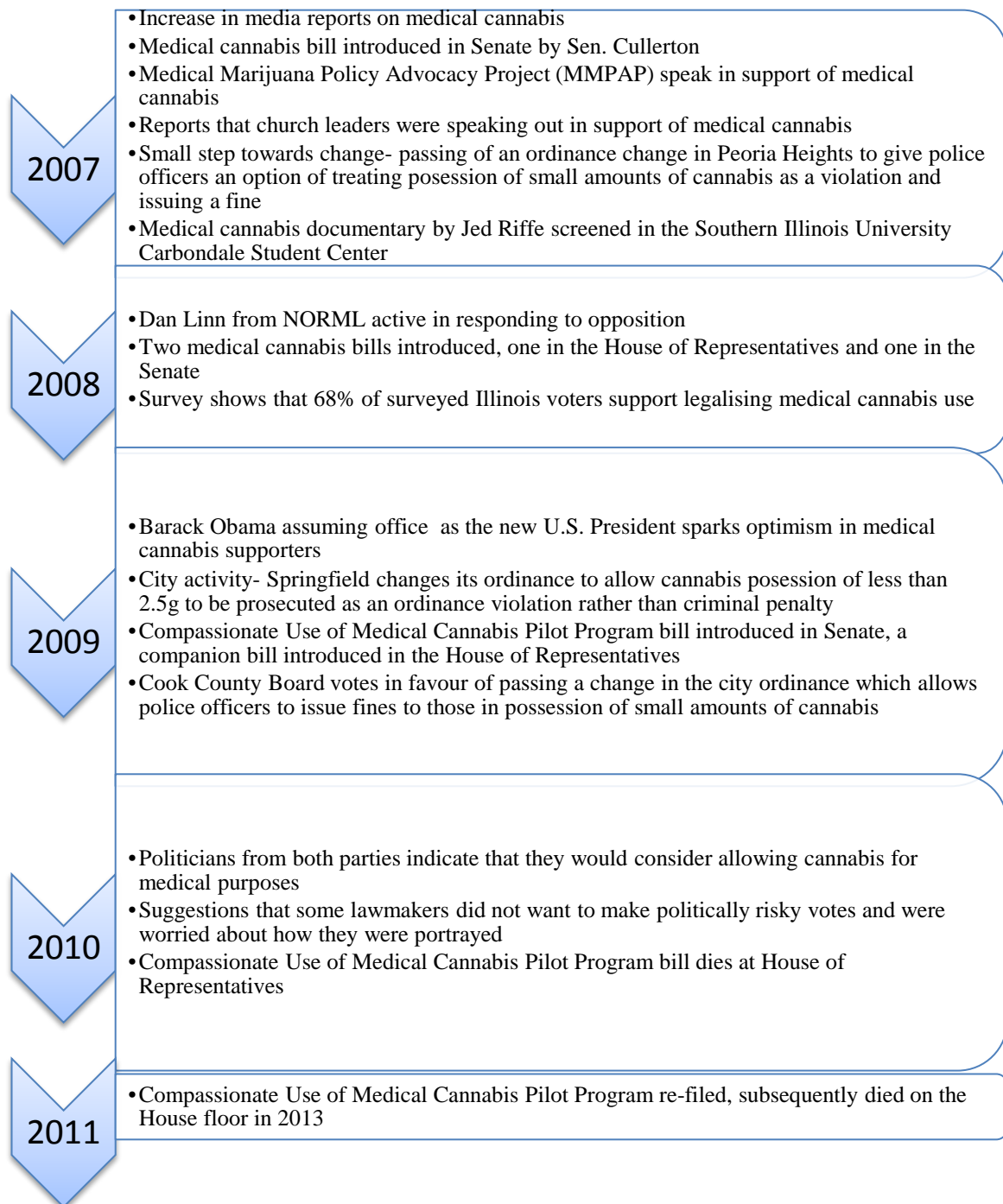


Figure 4. Time chart of medical cannabis history in Illinois.

In 1978, along with 34 other states, Illinois passed a medical cannabis therapeutic research law which allowed physicians to administer cannabis to glaucoma and cancer chemotherapy patients (Lichtenberg, 2009). According to the Alliance for Cannabis Therapeutics (1999), the Illinois medical cannabis therapeutic research bill was passed in September 1978, on a 140-16 House vote, and a 45-4 Senate vote. Prior to the bill, Illinois law only had provisions allowing limited use of cannabis for persons conducting research (Lichtenberg, 2009). The bill's sponsor was Rep. Joseph B. Ebbesen (R), who said there was evidence that cannabis was effective in reducing eye pressure for glaucoma patients, and in relieving negative chemotherapy side-effects ("Medicinal Pot Use Legal", 1978). Senator George Sangmeister (D), the bill's co-sponsor who was diagnosed with cancer prior to his involvement with the bill and used cannabis to help with his treatment, played a key role in passing the bill (Ciccone, 1978). Governor James R. Thompson (R) showed his support for the bill as he signed it into law, calling it a "step forward in the practice of medicine". He also asserted that the bill was not a step towards general cannabis legalisation, and said that he did not want children to experiment with the drug ("Marijuana Approved for Glaucoma", 1978). The bill was due to take effect on January 1, 1979 ("Marijuana Approved for Glaucoma", 1978). According to a statement made by Sen. Cullerton (D) in 2007, the 1978 Illinois medical cannabis law became ineffective due to heated political debate at the time and restrictions placed on the law itself (Huffstutter, 2007).

The Illinois Cannabis Control Act (2005) still contains a provision allowing the Department of Alcohol and Substance Abuse to authorise (a) possession, (b) production, (c) manufacture, and (d) delivery of cannabis-containing substances by individuals taking part in a research program. Under the act, if an individual's doctor authorised

them to participate in the research program by certifying such participation was medically necessary for the treatment of glaucoma or side effects of chemotherapy or radiation, that patient was then exempt from state-level prosecution. Registered medical professionals were allowed to apply for federal registration to conduct a medical cannabis research program in a treatment setting, with written permission from State Police (Cannabis Control Act, 2005). However, the program is ineffective as the law requires the participants to be registered with the federal government in order for the government to supply medical cannabis, and the drug is illegal at the federal level, with the exception of patients receiving it through the NIDA as part of medicinal research (Lichtenberg, 2009; Werner, 2001).

Since the law was passed, no person had participated in using cannabis as a medicine under its provisions, nor was any cannabis obtained from the federal government for therapeutic research purposes (Lichtenberg, 2009). According to Bryan Brickner from Illinois NORML, the “War on Drugs” was responsible for the failure of the Illinois program by allocating authority for the program to the Illinois Department of Alcohol and Substance Abuse (M. Harris, 2003). Brickner thought that the move resulted in medical cannabis research falling under “substance abuse”, and therefore being illegal (M. Harris, 2003).

The issue of medical cannabis drew public attention in 2001, when the house of Brenda Kratovil in Waukegan, Illinois was searched by the Metropolitan Enforcement Group, after a neighbour reported seeing cannabis plants in her backyard (M. Harris, 2003). The search was allegedly conducted without a warrant and three months later resulted in Kratovil being charged with cannabis possession. Kratovil claimed that cannabis helped her with glaucoma, which she had suffered for over 20 years. She was also legally blind and diagnosed with multiple sclerosis. Kratovil’s lawyer, David

Stepanich, sought to use a medical necessity defence at her trial, drawing upon the 1978 Illinois medical cannabis research law (Cannabis Control Act, 2005; M. Harris, 2003; *People v. Kratovil*, 2004).

On June 4, 2003 Kratovil's doctor Michael Savitt testified that Kratovil's glaucoma case was severe and that the best treatment option for her would be laser surgery (*People v. Kratovil*, 2004). He also testified that the benefits of cannabis in glaucoma treatment are only temporary and that there was not significant evidence for its effectiveness in relation to glaucoma (*People v. Kratovil*, 2004). The court found that Kratovil had other alternatives to cannabis for treating her condition, and was therefore not justified in breaking the law or in using the defence (*People v. Kratovil*, 2004). Kratovil claimed that under section 11 of the Cannabis Control Act, she had the right to possess cannabis (Cannabis Control Act, 2005; *People v. Kratovil*, 2004). The court, however, found that she was not entitled to a medical necessity defence under the act as (a) she did not participate in medical research; (b) her doctor was not involved in medical research, and (c) no authorisation was obtained from the Illinois Department of Health (IDOH). Kratovil was found guilty of unlawful cannabis possession and sentenced to 12 months' conditional discharge and 30 hours of community service (*People v. Kratovil*, 2004).

Following Kratovil's trial, the first attempt at passing medical cannabis legislation in Illinois was the Medical Cannabis Act (2004a). It was introduced in the House of Representatives in February of 2004 by Rep. Angelo Saviano (R), was sponsored by Rep. Larry McKeon (D), and co-sponsored by Rep. Susana Mendoza (D) (Medical Cannabis Act, 2004a). The bill sought to amend the Cannabis Control Act in order to allow individuals diagnosed with a debilitating medical condition to use cannabis for medical purposes. Debilitating medical conditions specified by the bill

included cancer, glaucoma, HIV/AIDS, cachexia or wasting syndrome, severe pain, severe nausea, seizures including epilepsy, severe and persistent muscle spasms including those characteristic of multiple sclerosis or Crohn's disease, and any other condition approved by the IDOH. The bill would have allowed patients and their primary caregiver to possess up to six cannabis plants and one ounce of dried, useable cannabis, without state-level prosecution (Medical Cannabis Act, 2004a).

The first medical cannabis bill received media attention, and both opponents and proponents spoke out. While critics said there were other drugs available in place of cannabis, Bruce Mirken from the MPP maintained cannabis was effective in assisting some patients with specific debilitating medical conditions, such as the side effects of cancer therapy or AIDS medication (McKinney, 2004). Opponents also claimed the bill would be hard to enforce and would increase drug use (Griffy, 2004). Representative Patricia Bellock (R) spoke against the bill and stated that it was not up to the electorate or the General Assembly to decide what is considered medicine, but up to professionals (S. Miller, 2004). Deputy Director of the White House's ONDCP, Dr. Andrea Barthwell, also spoke in Springfield against the proposed medical cannabis legislation (McKinney, 2004). On her tour of Illinois Dr. Barthwell said there were no proven medical benefits for cannabis, only short and long term risks. She also said that medical cannabis would (a) affect the whole society; (b) would make the drug available to children; and (c) would result in an increase in drug addiction (Griffy, 2004).

Support for medical cannabis legislation came from Richard J. Rawlings from the Illinois Marijuana Party (IMP) who said he believed doctors should not be criminally prosecuted for prescribing cannabis to their patients if they believe it to be necessary (Rawlings, 2004). Rawlings said that prohibition, not cannabis, was a gateway to use as it resulted in a rise in all illegal drug use. However, Greg Sullivan,

executive director of the Illinois Sheriff's Association, thought that such a law would increase the illegal flow of cannabis (Rawlings, 2004).

The bill was assigned to the Health Care Availability and Access committee, where it died in January of 2005 without being voted on (Illinois General Assembly, n.d.-d). An identical bill was introduced in the Senate in February 2004 by Sen. Carol Ronen, but it also failed to pass (Medical Cannabis Act, 2004b). It was expected that the medical cannabis bill would be introduced again in the next legislative session (A. L. Smith, 2004). The bill's sponsor Rep. Larry McKeon (D) said he would not give up on the bill despite opposition in the legislature (S. Miller, 2004). Representative McKeon suffered from HIV and nausea for 20 years and saw cannabis as a cure for his pain (S. Miller, 2004). He said that the legislation was not about expanding the drug's availability on the street, but helping sick individuals (S. Miller, 2004).

In January 2005 a Medical Cannabis Act was again filed by Rep. Larry McKeon (D), this time with changes in the amount of cannabis an individual was allowed to possess (Illinois General Assembly, n.d.-b). The bill also sought to allow non-profit organisations to grow limited amounts of cannabis for registered patients (Illinois General Assembly, n.d.-b). When the bill was introduced, Dr. Barthwell was touring 18 Illinois cities holding seminars opposing cannabis legalisation, including medical cannabis (Bowen, 2005). Representative McKeon said that he believed Barthwell's seminars were a smear campaign against his medical cannabis proposal and challenged Dr. Barthwell to a public debate on the issue (Massingale, 2005). McKeon's debate challenge was refused by Dr. Barthwell, who said she did not engage in "street theatre" (Massingale, 2005). At the same time it was reported in the media that Dr. Barthwell was considering a run for the U.S. Senate, representing Illinois (Hahn, 2005).

Richard Rawlings from the IMP suggested that Dr. Barthwell was spreading drug war propaganda (Rawlings, 2005). He said that drug prohibition did not work and that the government had to focus on “harder” drugs rather than cannabis, while organisations such as the MPP and the NORML were trying to change unfair laws (Rawlings, 2005). Barthwell denied that her Illinois tour was related to the introduction of a medical cannabis bill in the state but said that there was no “compelling” scientific or medical evidence for cannabis’ effectiveness. Barthwell also said that while she was compassionate to sick individuals, she believed cannabis did more harm than good (Bowen, 2005). Bruce Mirken from the MPP disagreed with Barthwell and said many things she was stating were not true. He opposed her claims and expressed his support for Rep. McKeon’s bill, while adding that the FDA had no role in regulating personal use of a drug (Bowen, 2005).

The start of 2006 saw a new medical cannabis bill introduced in the Senate by Sen. John Cullerton (D) (Medical Cannabis Act, 2006). The bill sought to allow individuals diagnosed by their doctor as having a debilitating medical condition and their caregivers to legally possess up to 12 cannabis plants and two and a half ounces of dried, useable cannabis (Medical Cannabis Act, 2006). The bill was assigned to the Health & Human Services Committee, where it died in January of 2007 (Illinois General Assembly, n.d.-h). A newspaper article suggested that the medical cannabis debate was only getting started in Southern Illinois (Morelli, 2006). However, Michael Steelman of the NORML said that medical cannabis legislation may be more than a decade away in the state. Steelman said that while there was some support in the legislature, people were generally unwilling to talk about the medical cannabis issue and were not progressive (Morelli, 2006).

The year 2007 saw an increase of media articles on medical cannabis and suggestions that the federal government should not waste tax dollars on failed policies and should allow more research into medical cannabis if they claim not enough scientific evidence on the drug's medicinal effectiveness was available (Sharpe, 2007; "Truth and Medical Marijuana", 2007). In February of 2007, a new medical cannabis bill was introduced by Sen. John Cullerton (D) (S.B. 0650, 2007). It sought to allow individuals diagnosed with a specific debilitating medical condition and their caregivers to legally possess no more than twelve cannabis plants and two and a half ounces of useable cannabis (S.B. 0650, 2007). The bill was assigned to the Public Health Committee where it passed on a 6-4 vote in March 2007 (Illinois General Assembly, n.d.-f). However, the bill died on the Senate floor on a 29-22 vote in May of the same year (Illinois General Assembly, n.d.-f). Senator Cullerton (D) said that he was disappointed the bill was not passed as it was overwhelmingly supported in the community (Potter, 2007).

In March of 2007, Dr. David Ostrow, co-founder of the Howard Brown Health Research Center of Chicago and founder of the Medical Marijuana Policy Advocacy Project (MMPAP) said that there was significant evidence for the effectiveness of cannabis in the treatment of a number of debilitating medical conditions, including HIV/AIDS (Ostrow, 2007). An increase in religious denominations speaking out in favour of medical cannabis was also observed in 2007. It was reported that dozens of pastors and church leaders in Illinois spoke out in support of medical cannabis, suggesting that lawmakers had a moral responsibility to allow seriously ill patients to use medical cannabis (Huffstutter, 2007). They sent an email to Illinois senators in March asking them to remove criminal sanctions from doctors recommending cannabis to patients and from patients using cannabis for debilitating medical conditions. They

also questioned whether it should be up to the government to decide on medical issues or up to those in research and medical fields (Huffstutter, 2007). Meanwhile, Calvina L. Fay, Executive Director of the Drug Free America Foundation (DFAF), a national drug policy group, disagreed with the medical cannabis legislation and said that religious leaders could not necessarily judge an issue such as medical cannabis (Huffstutter, 2007).

In November of 2007, a documentary on medical cannabis by Jed Riffe screened in the Southern Illinois University Carbondale Student Center (Rodriguez, 2007). The documentary followed patients who used cannabis to help with their medical conditions as well as parents who had lost their children to addiction, as Riffe said he believed in showing both sides of the argument. Dan Bernath, assistant director of communications for the MPP, supported the documentary and said it was a good way to start a discussion on the topic (Rodriguez, 2007).

In February 2008 one medical cannabis bill was introduced in the House of Representatives and one in the Senate (Alternative Treatment Act, 2008; Medical Marijuana Pilot Program, 2008). A Medical Marijuana Pilot Program (2008) bill was introduced in the Senate by Sen. John J. Cullerton (D) and it sought to allow patients diagnosed by their doctor as having a debilitating medical condition to obtain an IDOH-issued identification card. The card would then allow the patients and their caregivers to possess no more than 12 cannabis plants and two and a half ounces of dried, useable cannabis. The bill was referred to the Public Health Committee which amended it to include a provision stating that qualified patients in possession of allowed amounts of cannabis, their caregivers and physicians would not be subject to prosecution (Illinois General Assembly, n.d.-i). The bill passed the committee and was sent to the senate floor. The second amendment came in the Senate in November 2008, and added a

sunset clause to the bill which meant it would expire three years after taking effect. The amendment also changed the maximum number of plants allowed to be in patient's possession to seven. However, the bill died in the Public Health Committee in January of 2009 (Illinois General Assembly, n.d.-i). The second bill was introduced in the House by Rep. Angelo Saviano (R) and was the same as the bill introduced in the Senate (Alternative Treatment Act, 2008). It was assigned to the Health Care Availability and Access Committee on 11th March of 2008 where it was amended (Illinois General Assembly, n.d.-e). However the bill failed to pass as amended on a 9-3 vote and subsequently died in committee (Illinois General Assembly, n.d.-e).

Prior to the bills' failure, Sen. Cullerton said his bill was about preventing patients from suffering and not about the law being abused to obtain cannabis (Mehrotra, 2008). However, Sen. Dale Righter (R) disagreed and said medical cannabis legalisation was a bad idea (Mehrotra, 2008). Laimutis Nargelenas, director of the Illinois Association of Chiefs of Police, said there were better ways of legalising cannabis than using sick people as a cover up for the drug's legalisation (Mehrotra, 2008). Nargelenas said he had no objections to medical cannabis but believed those attempting to legalise the drug for general use were hiding behind sick people and medical cannabis (Radosevic II, 2008). He also mentioned that the measure sent a mixed message to children. According to reports, the Illinois State Police opposed the bill as it believed its wording would create a loophole allowing motorists to drive while under the influence of cannabis (Radosevic II, 2008).

Dan Linn, from the NORML, was very vocal throughout 2007, writing numerous articles to the state newspapers in favour of legalising cannabis, as well as responding to opposition arguments. He also spoke in favour of general cannabis legalisation and suggested taxation and regulation of the drug (Linn, 2008a; Linn,

2008b; Linn, 2008c; Linn, 2008d; Linn, 2008e). Linn said the move would raise revenue for the government and would regulate the market (Linn, 2008b). He also maintained that it was cruel to keep sick people away from something that could help them ease their suffering and that studies had shown cannabis was not a ‘gateway drug’ (Linn, 2008c). In November of 2008, Linn said that Illinois made a lot of progress during the 2008 legislative session (Linn, 2008f). He said that Illinois needed a medical cannabis law and that the decision of what medicine is the best for an illness should be left to the patient and their doctors, not law enforcement personnel (Linn, 2008f). He urged the lawmakers to pass Sen. Cullerton’s bill as cannabis was a safe, natural medicine, which doctors should be able to recommend to their patients (Linn, 2008g).

With an increase in individuals and organisations voicing their support for medical cannabis legislation, a survey was conducted by Mason-Dixon Polling and Research Inc. in 2008 (Radosevic II, 2008). It found that 68 percent of 625 registered Illinois voters surveyed favoured legalising medical cannabis use by seriously or terminally ill patients (Radosevic II, 2008). The results also showed that 49 percent of respondents would be more likely to vote for their state legislators if they supported and voted for a medical cannabis measure (MPP, 2008). The MPP initiated the survey and its spokesman, Dan Bernath, said the results were not surprising as the issue of medical cannabis was becoming more of a health issue rather than a political one (Radosevic II, 2008). Also sparking optimism in medical cannabis supporters was seeing Barack Obama assume office in 2009 as the new U.S. President. Medical cannabis advocates such as Dan Linn hoped this would lead to a change in medical cannabis laws (Linn, 2009a).

New attempts. On 11th February 2009, Sen. William R. Haine (D) introduced the Compassionate Use of Medical Cannabis Pilot Program Act (2009a) which sought

to enable those diagnosed by their doctors as having a debilitating medical condition to obtain an identification card from the IDOH. The card was to enable the holder and their caregiver to possess no more than seven cannabis plants and two ounces of useable dried cannabis without prosecution at the state level. The bill specified that a distinction would be made between the medical and non-medical use of cannabis by the State in order to protect patients with debilitating medical conditions. Some of the debilitating conditions specified by the bill included glaucoma, HIV/AIDS, epilepsy and other ailments. Consistent with the amendment made to the 2008 bill, Sen. Haine's bill included a sunset clause stating the act would expire after three years from the day it took effect (Compassionate Use of Medical Cannabis Pilot Program Act, 2009a). Senator Haine was a former state's attorney and it was believed by some that he could better address the issues raised by law enforcement regarding medical cannabis (Colindres, 2009). The media also speculated that because Sen. John Cullerton (D), who had sponsored a medical cannabis bill previously, became the Senate president, the medical cannabis bills might pass through the Senate more easily as a result of Sen. Cullerton's role (Colindres, 2009).

The bill's supporters claimed its purpose was to help the seriously ill (Colindres, 2009). Dan Linn said that it was trying to protect those using cannabis with their doctor's recommendation and for medical purposes (Colindres, 2009; Nave, 2009). Speaking in opposition, Laimutis Nargelenas said the law enforcement community had compassion towards very sick individuals, but that those who were trying to get high and were not seriously ill could abuse the medical cannabis law. Nargelenas said that calling cannabis a medicine was sending a bad message to children (Colindres, 2009).

On 20th February 2009, a companion bill to Sen. Haine's (D) Compassionate Use of Medical Cannabis Pilot Program Act, sponsored by Reps. Lou Lang (D) and

Angelo Saviano (R), was introduced in the House (Compassionate Use of Medical Cannabis Pilot Program Act, 2009b). The bill sought to allow patients diagnosed by their doctor as having a debilitating medical condition to obtain an identification card from the IDOH, entitling them to possess medical cannabis without state-level prosecution. The bill would allow patients and their primary caregivers to possess up to seven cannabis plants and two ounces of dried, useable cannabis. It also included a provisional clause which specified the act would end after three years of taking effect (Compassionate Use of Medical Cannabis Pilot Program Act, 2009b). The bill's sponsor, Rep. Lou Lang (D), said people were suffering needlessly while cannabis had the potential to ease their pain (Wills & Schott, 2009). He stated that a medical cannabis bill was a difficult one to pass, even with a three year sunset clause (Wills & Schott, 2009). The bill was assigned to the Human Services Committee in February where it was passed on a 4-3 vote (Illinois General Assembly, n.d.-c). It was then sent to the House floor, from which it was re-referred to the Rules Committee. The bill died in House in 2011, without ever being called for a vote (Illinois General Assembly, n.d.-c).

Speaking in opposition to medical cannabis, Rep. Patricia Bellock (R) said that the bill could be misused by those who did not have a debilitating medical condition (Wills & Schott, 2009). She also wondered whether the bill would open the door for general cannabis legalisation in Illinois (Wills & Schott, 2009). Representative Robert Pritchard (R) said he voted against the legislation, as he believed it was not a pilot program but an experiment which could result in places selling cannabis without regulation (Wills & Schott, 2009). Senator Chris Lauzen (R) spoke against the bill, but said that as he aged he was more conflicted about it (Bonner, 2009). In his opinion, Marinol was effective and already available in place of cannabis. Raising a common

issue, Rep. Kay Hatcher (R) said the Illinois bill was loosely written and would send a wrong message to children (Bonner, 2009; Griffith, 2009b).

Opponents of the medical cannabis legislation were also speaking out against several pro-medical cannabis advertisements produced by the MPP (Griffith, 2009b; MPP, 2013). Dr. Andrea Barthwell, by now chief executive officer of the Human Resource Development Institute (HRDI), said the advertisements were spreading misinformation and that the health and welfare of children as well as community safety would be affected as a result. Judy Kreamer, president of Educating Voices, said her organisation's efforts to oppose medical cannabis could not match those of the MPP. The television commercials were introduced in April and ran in Chicago, Peoria, and the Decatur/Springfield/Champaign areas. They featured testimonials from two Illinois medical cannabis patients, Lisa Lange Van Camp and Lucie Macfarlane (MPP, 2013). Senator Haine said he hoped the lawmakers would realise there were many patients who would benefit from medical cannabis legislation. He also said the introduced legislation included many safeguards and differed from California's in order to avoid problems experienced by that state. In response to opponents' claims that cannabis was a gateway drug, Sen. Haine said they should read his bill, as most of those who would be using medical cannabis were people who were dying (Griffith, 2009b).

Senator Haine's bill was assigned to the Public Health Committee in February of 2009 where it was passed on a 6-2 vote (Illinois General Assembly, n.d.-g; M. Thomas, 2009). In May of 2009, the Senate passed the Compassionate Use of Medical Cannabis Pilot Program Act by a vote of 30-28. The bill was then sent to the House and assigned to the Human Services Committee, which passed it on a 4-3 vote in May of 2009. Senator Haine (D) said it was an important step for those who were suffering, and who relied on medical cannabis (Griffith, 2009a). In October 2009 the bill was waiting for its

final reading and a vote on the House floor, and was given a final action deadline of 30th November 2009 (Illinois General Assembly, n.d.-g). Discouragingly for the supporters, Rep. Lou Lang (D), who previously sponsored a medical cannabis bill which died in the House, said he was unsure how far any medical cannabis measure would go in the House of Representatives (“Senate Approves Medical Marijuana”, 2009).

The law enforcement agencies maintained their opposition to medical cannabis (Griffith, 2009c). Madison County Sheriff Robert Hertz said he could not speak on behalf of all law enforcement but was personally against the bill. Hertz said he worried cannabis would be hard to control once it was legalised for medical purposes. He questioned whether, if cannabis was legalised, cocaine and methamphetamine would be next. Sen. Haine (D), however, said he believed in the bill and the positive impact it could have on people, and that received more letters for the bill than against it. However, he admitted that, overall, he did not receive a lot of mail on the subject, and interpreted this as people not caring about the issue (Griffith, 2009c). Reportedly, Haine also stated that he worried that the legislation would send a wrong message to children, which is why most people would not be supportive of it. Despite this, he said no one should live in pain (Griffith, 2009c).

While the Compassionate Use of Medical Cannabis Pilot Program Act passed two House committees, in April 2010 it had still not been brought up for a House vote (Illinois General Assembly, n.d.-c). Representative Lang (D) said that some officials chose to vote against it and their own beliefs for political reasons (Thompson, 2010). He said that he had to be careful when to put the bill to a vote because he could not afford it to fail, as many legislators would only vote for such a bill once. Because he believed people were scared of problems resulting from a medical cannabis law, Lang said that he made the bill controlled and restrictive. Senator Linda Holmes (D) said that she

voted against the 2008 medical cannabis bill because she was up for re-election and did not want to be seen as a supporter of drugs. In May 2009, however, she voted “yes” on the medical cannabis bill and said the reaction of her constituents was more positive than negative (Thompson, 2010).

In 2010, news reports indicated that politicians from both parties said that they would consider allowing cannabis for medical purposes (Frick Carlman, 2010; O'Connor, 2010). Some, like Sen. Linda Holmes (D), had personal reasons for supporting the bill. Senator Holmes, one of 12 sponsors of the medical cannabis bill and an MS sufferer, said she supported medical cannabis legislation because it could help bring MS sufferers relief from pain and spasticity and stimulate appetite (O'Connor, 2010). However, there were also those who believed that medical cannabis legalisation would lead to general legalisation of the drug (Frick Carlman, 2010; O'Connor, 2010). Overall, 2010 saw the debate continue, with opponents claiming that cannabis is a cover for other illegal activity and proponents suggesting that, apart from medical benefits, cannabis was a safe drug, especially when compared to other drugs it replaced. There were also suggestions made by the proponents that medical cannabis legislation would generate tax revenue for the state (D. Miller, 2010).

In April 2010, Rep. Lang (D) announced to the media that he was short of the 60 votes needed for the bill's approval in the House of Representatives (Patterson, 2010). He said he was told by some members that they hoped the bill would pass, but they did not plan on voting for it. It was suggested that some lawmakers did not want to make politically risky votes and were worried about how they were portrayed (Patterson, 2010). As a result, Lang said he would not call for a vote until he knew that the measure would pass (Olsen, 2010). He was considering bringing the bill up for discussion in the House of Representatives in January, before the new legislators took their seats at the

General Assembly (Huchel, 2010). A late year session would have required 71 votes for the bill to pass, while in January session it would take only 60 votes (Huchel, 2010).

Medical cannabis advocates said that they would continue to push for the legislation (Olsen, 2010). However, despite efforts, the 2010 medical cannabis failed to pass the House (Hess, 2011; Lester & Riopell, 2010). The bill received 56 votes in its favour, but needed 60. In response, Dan Linn said there were a lot of politics involved (Lester & Riopell, 2010). The bill's sponsor, Rep. Lang (D) said he would continue to push for medical cannabis legislation (Hess, 2011). The bill known as the Compassionate Use of Medical Cannabis Pilot Program Act was filed again as House Bill 30 (Illinois General Assembly, n.d.-a).

In 2011, Rep. Tom Cross (R) changed sides to support medical cannabis legislation (Brownfield, 2011a; Wilson, 2011). He said that he had a change of heart after being approached by several constituents. Representative Lang indicated that he thought that this time, with the support of Rep. Cross, he could pass the bill which the sponsors were trying to make the most restrictive law out of all the states (Wilson, 2011). Rep. Lang hoped that putting more restrictions into this bill would get additional votes (Brownfield, 2011a). The proposed legislation would not allow patients to grow their own cannabis, but would have to buy it from a state-licensed dispensary. The bill would also legalise cannabis for medical purposes for three years, after which the law would have to be renewed (Wilson, 2011).

The bill was placed on postponed consideration after failing to get enough votes to be passed by the House of Representatives (Morse, 2011). The bill received 56 votes in its favour out of the 60 required for it to be passed, but this was enough for it to be placed on postponed consideration so that it can be voted on again in the future

(Brownfield, 2011b; Morse, 2011). Representative Lang said he would seek another vote on the bill if he could find more votes in favour of it. He pointed out that the bill was about health care and not about drugs, including cannabis. However, Rep. Jim Watson (R), who voted against the bill, said that every local law enforcement official called on him to oppose it (Brownfield, 2011b). It was also said by the opposition that the bill was a very bad piece of legislation, which opposed the federal law (Morse, 2011).

Changes at the city level. The same year the Medical Cannabis Act was introduced, there was also some activity reported at the city level when Chicago Mayor, Richard Daley, said that he embraced an idea to issue fines to individuals found to be in possession of small amounts of cannabis instead of filing criminal charges (“Daley: Just Ticket Marijuana”, 2004). Bryan Brickner, a chairman of the Illinois chapter of the NORML, said the plan was a turning point (Goze, 2004). However, his concern was that Chicago was focusing on generating revenue with fines of between \$250-\$1,000, which Brickner predicted could significantly affect poor and minority residents (Goze, 2004). Amongst reports that Mayor Daley was considering such a plan it was reported that most North Shore (Chicago) police agencies had already been doing something similar for nearly 25 years (Goze, 2004). Wilmette Police Chief George Carpenter said the village had an ordinance by which officers had the option to issue fines of \$100 to individuals in possession of ten grams or less of cannabis. It was created in August 1978 as a way of dealing with high rates of cannabis use and an overloaded court. He said the ordinance was a more sensible approach to minor violations and did not mean cannabis was decriminalised. Kenilworth, a village in Cook County, also had a similar ordinance (Goze, 2004).

In May 2007 an ordinance change was due to take effect in the village of Peoria Heights (Haney, 2007). It was set to give police officers an option of treating possession of small amounts of cannabis as a violation and issuing a fine rather than criminally charging individuals (Haney, 2007). Possession of less than 2.5 grams of cannabis would result in a \$200 fine; between 2.5 and 10 grams, a \$300 fine; and between 10 and 30 grams, a \$400 fine (Haney, 2007). At the same time Dan Linn, Executive Director of the Illinois NORML, suggested changes should be made to the Illinois cannabis law and said that lawmakers should legalise and tax cannabis as a form of revenue raising (Linn, 2007). Linn said it made more sense than arresting people and advised that Illinois should stop wasting tax dollars and start making money by taxing cannabis use by adults (Linn, 2007).

In February of 2009, a small change in relation to cannabis occurred in Springfield (Poole, 2009). The city changed its ordinance to allow cannabis possession of less than two and a half grams to be prosecuted as an ordinance violation resulting in a fine, rather than a criminal penalty (Poole, 2009). Cities with similar ordinances included Joliet, Aurora, Bloomington, Champaign and Urbana. It was reported that Springfield's ordinance change was a way of raising revenue for the city, which reportedly faced a \$12.5 million budget deficit (Poole, 2009). Dan Linn suggested that cannabis could be a good way of tax and revenue raising and said government could make even more money if cannabis was made legal (Linn, 2009b).

In July of 2009, the Cook County Board voted in favour of passing a change in the city ordinance which allows police officers to issue fines to those in possession of small amounts of cannabis. This then results in a misdemeanour charge instead of criminal prosecution (Kadner, 2009). The ordinance change gave police officers an option of issuing a \$200 fine to those caught with 10 grams of cannabis or less. At that

point, however, Cook County Sheriff Tom Dart said he was not sure what he thought of the change (Kadner, 2009).

Dan Linn, of Illinois NORML, said the organisation supported Cook County changing their ordinance (Linn, 2009c). However, he said the problem was the potential for discriminatory arrests, as it would be up to police officers to decide whether to fine or arrest individuals (Linn, 2009c). His suggestion was that cannabis should generally be legalised and regulated like alcohol and tobacco (Linn, 2009c). Reverend Alexander Sharp, executive director of Protestants for the Common Good, said he also supported the ordinance change (Sharp, 2009). He said the local government needed all the money it could get and fining those possessing small amounts of cannabis would raise revenue. Reverend Sharp also said he was not advocating cannabis use, but believed people needed to change their way of thinking in regards to drugs (Sharp, 2009).

Kentucky

Unlike the 36 states that have had some form of medical cannabis law since 1978, Kentucky has never had such a law or consideration of such laws on its political agenda (MPP, 2013)⁹. As Kentucky does not have a ballot initiative process, passing a medical cannabis law remains an issue dependent on the state legislature or the executive which had, at the time of writing this thesis, not shown significant interest in the topic (IRI, 2009). According to the 2002 Kentucky Drug Threat Assessment report, cannabis was rated as the most widely available illicit drug in the state and the leading crop grown for sale (National Drug Intelligence Center, 2002). The report suggested that

⁹ Since the writing of this thesis, there has been consideration of a medical cannabis law in the state of Kentucky.

the central and eastern parts of Kentucky were the areas of largest cannabis cultivation. Kentucky was also named as one of top five cannabis producing states in the nation.

In accordance with state laws, cannabis possession, cultivation, sale, or use, are criminal offences in Kentucky while research on industrial hemp is authorised (Ky. Rev. Stat. § 218A.010, 1992; Ky. Rev. Stat. § 260.853, 2001). Hemp refers to a fibre derived from certain species of cannabis that contains minimal amounts of THC (Hollister, 2001). Hemp fibre can be used in the making of rope, clothes, paper, and other products. As Kentucky has no medical cannabis law, the following section will chronologically review (see Figure 5) the history of the brief but unsuccessful attempts made at passing such legislation.

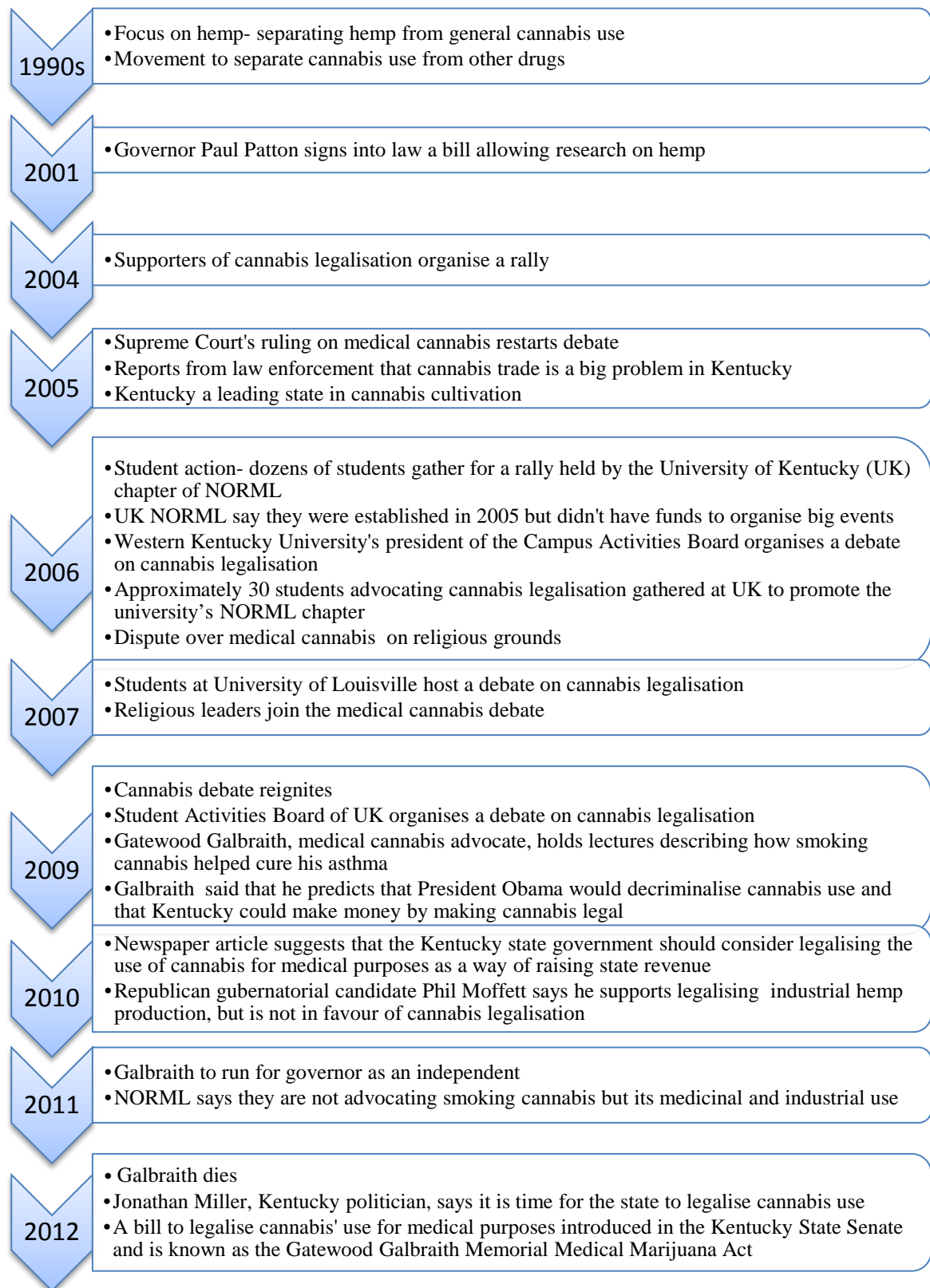


Figure 5. Time chart of medical cannabis history in Kentucky.

In the late 1990s, the focus in Kentucky was on separating hemp from general cannabis use rather than medical cannabis (“Victory for Hemp?”, 1997). In Kentucky, supporters of general cannabis legalisation attempted to make the legalisation movement stronger by separating cannabis use from other drugs such as heroin (“Victory for Hemp?”, 1997). In March of 2001, Kentucky Governor Paul Patton (D) signed into law a bill allowing research on hemp to be conducted at Kentucky universities (“Kentucky Governor Signs”, 2001; Ky. Rev. Stat. § 260.853, 2001). Joe Hickey, head of a Hemp Growers Cooperative, said that hemp was a way of compensating for the loss of revenue Kentucky tobacco farmers were facing, and was not an attempt at cannabis legalisation (“Kentucky Governor Signs”, 2001).

Following the passage of hemp research legislation, cannabis and its medical use did not get a significant mention until May 2004, when supporters of cannabis legalisation organised a rally through downtown Lexington (“Cures, Not Wars”, 2004). The rally was organised by Gatewood Galbraith, a Kentucky politician and lawyer (“Cures, Not Wars”, 2004; Galbraith, 2004). Galbraith ran for governor of Kentucky in 1999 as a member of the Reform Party; for Congress in 2000 as a Reform Party candidate and again as an independent in 2002; and for Commissioner of Agriculture in 1983 as well as Attorney General in 2003 (B. Thomas, 2006). Galbraith said cannabis’ use as a medicine spanned over thousands of years and was the basis for over 50 medicines (Galbraith, 2004). At the rally, some speeches discussed the benefits of cannabis as a medicine in the treatment of some medical conditions, while others suggested that legalising the medical use of the drug would help Kentucky’s budget and health-care crises (“Cures, Not Wars”, 2004).

Following the rally, there was some mention of medical cannabis and its benefits for some individuals with debilitating medical conditions, but this occurred mainly in

student newspapers (Adkins, 2004). However, after brief mentions of it in 2004, there was no movement on the medical cannabis front until mid-2005, when the Supreme Court's ruling on medical use of cannabis re-started the debate (Slider, 2005). Supporters started writing to newspapers in support of medical cannabis and in disagreement with the war on drugs (Rector, 2005; Slider, 2005). While some tried to discuss cannabis' medical benefits, Capt. Lisa Rudzinski, spokeswoman for the Kentucky State Police, discussed the number of cannabis plants seized in the state (Covington, 2005). Cheyenne Albro, director of the Pennyrile Narcotics Task Force, said cannabis trade was a big problem in Kentucky and one the police tried to get under control. According to police reports, in the period between 2000 and 2005, an average of more than 450,000 cannabis plants were found and destroyed annually by Kentucky law enforcement agencies. Despite this, Kentucky remains one of the leading states in cannabis cultivation (Covington, 2005).

Student action. The following year, in April of 2006, dozens of students gathered for a rally held by the University of Kentucky (UK) chapter of the NORML (B. Thomas, 2006). The university's NORML president, Drew Duncan, said the organisation had been around since 2005 but did not have enough financial support to organise big events. Gatewood Galbraith was invited by the UK NORML to speak to students in an attempt to increase NORML membership (B. Thomas, 2006). He spoke to students about cannabis legalisation and their rights in relation to possession of the drug. Opinions on Galbraith were mixed, with some believing he would increase NORML membership, while others believed his presence was an attempt to get votes for his next attempt at public office (B. Thomas, 2006).

A week after the NORML event at the UK, Daniel Trujillo, president of the Campus Activities Board at Western Kentucky University organised a "Heads vs. Feds"

debate on cannabis legalisation (Keene, 2006). Steven Hager, editor-in-chief of *High Times* magazine, represented supporters of cannabis legalisation while Bob Stutman, a retired DEA agent, represented the side advocating the continued criminalisation of the drug. Event organisers said its purpose was to inform students about cannabis and give them both sides of the cannabis legalisation debate (Keene, 2006).

In November of 2006, approximately 30 students advocating cannabis legalisation gathered at UK to promote the university's NORML chapter (Troutman, 2006). Gatewood Galbraith was once again the guest speaker at the gathering, during which he voiced his support for medical cannabis and the hemp industry (Troutman, 2006). Following on the same topic, it was reported in a newspaper article that groups advocating cannabis legalisation such as the DPA and the NORML argue that cannabis eradication programs such as the one operating in Kentucky are "a waste of money, doing little to cut the supply of pot while helping keep prices artificially high on the black market" (Estep, 2006). It was also claimed that the potency of cannabis grown in Kentucky has increased over the years, making it a prized drug outside of the state (Estep, 2006).

March of 2007 again saw student involvement when the University of Louisville Properties (ULP), which offer student housing for University of Louisville on campus students, hosted a debate on cannabis legalisation (Shastry, 2007). Sergeant Steve Salyers from the Louisville Police Narcotics/Vice Department moderated the debates. The debates were co-ordinated by Lamont Johnson, assistant community manager for ULP, and were aimed at presenting students with both sides of the cannabis legalisation debate. Medicinal and economic benefits gained from cannabis legalisation were emphasised by the pro-legalisation side, while the opposing side argued that cannabis was a gateway to "harder" and more dangerous drugs (Shastry, 2007).

In 2009, the Student Activities Board of UK organised a debate on cannabis legalisation on campus (Coover, 2009; Hurt, 2009). As in earlier years, the debate called “Heads vs. Feds” occurred between Steve Hager and Bob Stutman. When questioned, Hager said his magazine, *High Times*, promoted cannabis legalisation but was not involved in any illegal activities. Despite disagreements on the topic, Stutman said that he and Hager were personal friends and that he hoped students would hear a rational and intelligent presentation from both sides. During the debate, Hager spoke about the medical benefits of cannabis and suggested it should be legalised because it is a cheap medication (Coover, 2009; Hurt, 2009). Meanwhile, Stutman claimed cannabis was bad for people’s health and was not the benign drug people thought it was (Coover, 2009; Hurt, 2009). However, both sides seemed to agree that cannabis use was about responsibility (Hurt, 2009).

Religious stance. September of 2006 saw religion become involved in the cannabis debate, with Dr. Ted Beam, Senior Pastor of the United Methodist Church, writing against cannabis legalisation (Beam, 2006). He said that removing illegal drugs from the community would have a positive effect and disagreed with statements which suggested God intended for people to use cannabis (Beam, 2006). In response, Rev. Meril Draper said he disagreed with Dr. Beam’s sentiments as he was not interpreting scripture correctly (Draper, 2006). Reverend Draper said he spoke on the topic of medical cannabis from personal experience, as his grandfather used the drug while suffering from cancer. He questioned whether or not Dr. Beam would go out and start smoking cannabis if it were legalised, to which he believed the answer was no. Reverend Draper then asked why Dr. Beam believed everyone else would do so (Draper, 2006). Dr. Beam’s letter proved somewhat controversial and caused more individuals to write to newspapers to dispute his claims on religious grounds, question

the war on drugs, but also suggest that cannabis is a gateway drug and that its legalisation would lead to legalisation of other drugs such as cocaine (Givens, 2006; McLaurine, 2008; N. Miller, 2008a; N. Miller, 2008b; Ryan, 2007).

Debates. In 2009, the cannabis debate was again reignited when UK organised a debate on cannabis, which was followed by Gatewood Galbraith holding lectures in Kentucky in which he described how smoking cannabis helped cure his asthma (Reed, 2009). He said that earlier in history, America learnt that cannabis was the number one plant for all uses, but that the forming of chemical industries led to the criminalisation of the drug. Galbraith argued that cannabis had a variety of uses and was not bad for people's health. Galbraith predicted that President Obama would decriminalise cannabis use and that Kentucky could make money by making cannabis legal (Reed, 2009).

Galbraith wasn't the only one to suggest that money could be made from cannabis legalisation, with a 2010 newspaper article suggesting that the Kentucky state government should consider legalising the use of cannabis for medical purposes as a way of raising state revenue ("Why Not Medical Marijuana", 2010). The article stated that a medical cannabis bill would create jobs, generate revenue, and provide relief for tens of thousands of individuals suffering from a debilitating medical condition. The article suggested that the Federal government was forbidden from saying anything positive about cannabis by the Controlled Substances Act of 1970, and that the only good thing the federal government did was to decide not to interfere with medical cannabis users, doctors and providers as long as they abide by the state law. The article concluded that proposing a medical cannabis bill would be beneficial to legislators, as it would make the voters think the legislators were prepared to make a change ("Why Not Medical Marijuana", 2010).

Kentucky Republican gubernatorial candidate Phil Moffett said he supported legalising industrial hemp production, but was not in favour of cannabis legalisation (P. Smith, 2010). He said he opposed medical cannabis use on an “official level”, but would personally not “get in the way” of someone dying of cancer and smoking the drug for comfort. Moffett believed there was a humanitarian aspect to allowing cannabis use for seriously ill individuals such as terminally ill cancer patients (P. Smith, 2010). Despite mentions of the medicinal properties of cannabis and its possibility of increasing Kentucky’s revenue, no medical cannabis bill was introduced in the legislature at the time of writing, nor was any such law passed.

In 2011 Gatewood Galbraith was set to run for governor as an independent (Brockman, 2011). In February of the same year, he spoke to students at the Eastern Kentucky University, in a meeting organised by the NORML. Ashley Sharp, the executive director of NORML, said that they wanted Galbraith to speak to students in order to raise awareness of what the organisation’s mission is. Sharp also mentioned that the NORML was not advocating smoking cannabis, but its medical and industrial use (Brockman, 2011).

Follow-up. In January 2012 it was announced that Galbraith had died, five months after running his campaign for governor (Blackford, 2012; Gerth, 2012). Following his death, Jonathan Miller, a Kentucky politician, declared that it was time for the state to legalise cannabis use (J. Miller, 2012). Miller expressed his belief that cannabis was not as addictive as alcohol, tobacco, and some other drugs, as well as that there was evidence for its medical use. He also said that cannabis was Kentucky’s “number one cash crop” and would have economic benefits if it was legalised (J. Miller, 2012).

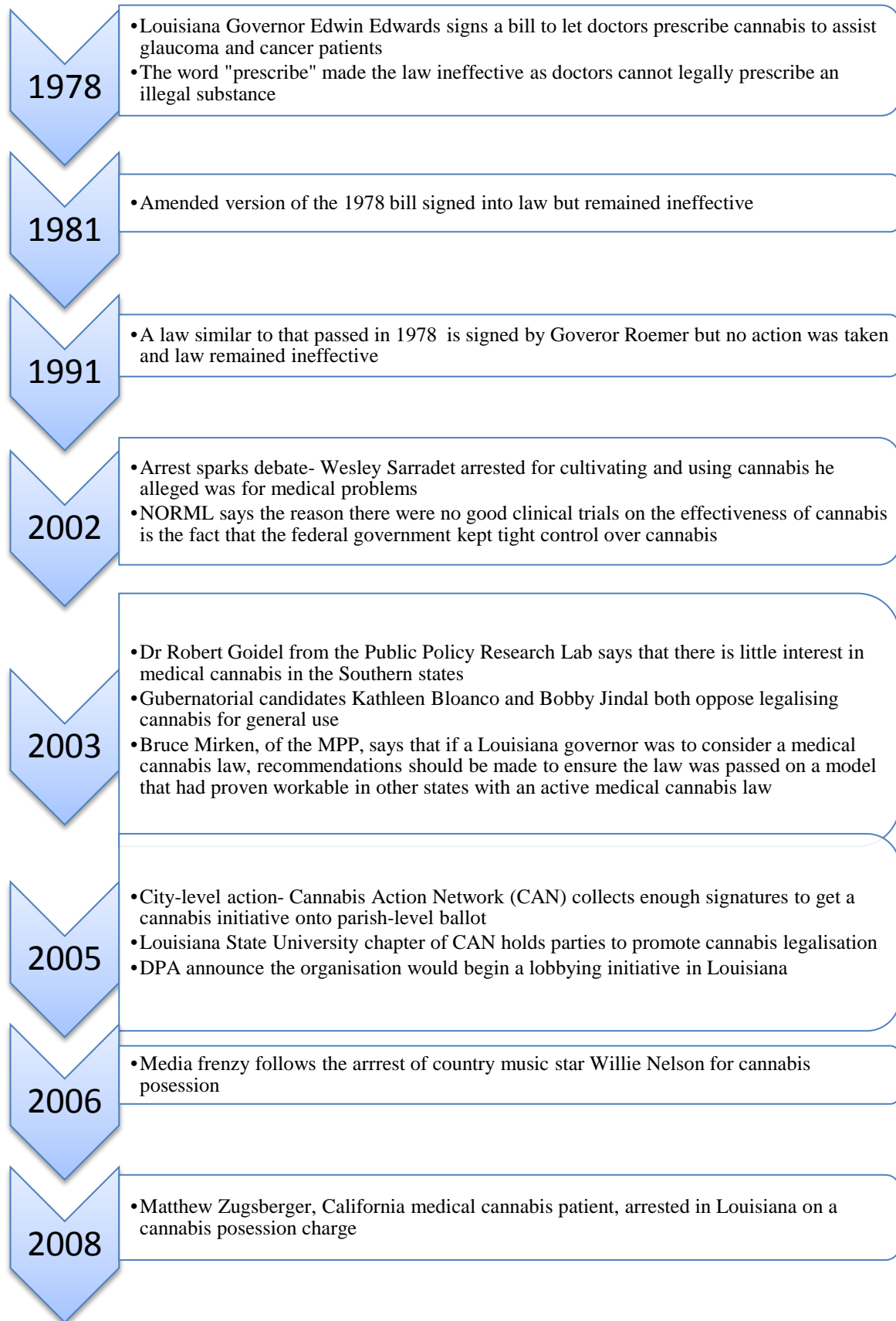
At the start of February 2012, a bill that would legalise cannabis' use for medical purposes was introduced in the Kentucky State Senate ("Medical Marijuana Comes", 2012). The bill known as the Gatewood Galbraith Memorial Medical Marijuana Act was introduced by Sen. Barry Clark (D) and sought to make cannabis a Schedule II drug. It also sought to give doctors the ability to prescribe up to five ounces of cannabis per month to their patients, or allow them to cultivate up to five cannabis plants (S.B. 129, 2010). However, by March 2012, the bill was stalled in the Senate Judicial Committee when its chair Sen. Tom Jensen (R) refused to call the measure before the committee, which meant that the bill could be dead for the 2012 legislative year (Clarke, 2012).

Louisiana

Like Kentucky, Louisiana is a state that has no effective medical cannabis law and is not in the process of considering such a law (MPP, 2013).¹⁰ The difference between these two states is that Louisiana has an existing medical cannabis law, enacted in 1978 and amended in 1991, which has remained ineffective and purely symbolic (La. Rev. Stat. § 40:1046, 1991; Loh-Harrist, 2002; MPP, 2013). The 1978 Therapeutic Use of Marijuana law allowed cancer and glaucoma sufferers to receive a cannabis prescription from their doctor. The law was amended in 1991 to include patients with spastic quadriplegia (La. Rev. Stat. § 40:1046, 1991). The law, however, remains ineffective as it does not include a way for doctors or patients to obtain cannabis, and federal drug laws made it available only for research programs (MPP, 2013).

¹⁰ Since this thesis was submitted, there has been consideration of a medical cannabis law in the state of Louisiana.

Cannabis possession, cultivation, sale, or trafficking, are a criminal offence in Louisiana (La. Rev. Stat. § 40:966, 1972). Penalties for possession of any amount of cannabis, even for a first offence, include a fine and possibly a term in prison. Despite the ineffective medical cannabis law, the state has not legalised cannabis use for medical purposes, and such use remains a criminal offence (La. Rev. Stat. § 40:966, 1972). As Louisiana does not have a ballot initiative process, the legislature is responsible for proposing law changes in the state (IRI, 2009). However, at the time of writing this thesis, the state's legislature had not attempted to pass a medical cannabis law since 1991 (Brumble, 2009). As Louisiana does not have an effective medical cannabis law, the following section will chronologically review the history of attempts made to pass medical cannabis legislation in the state.



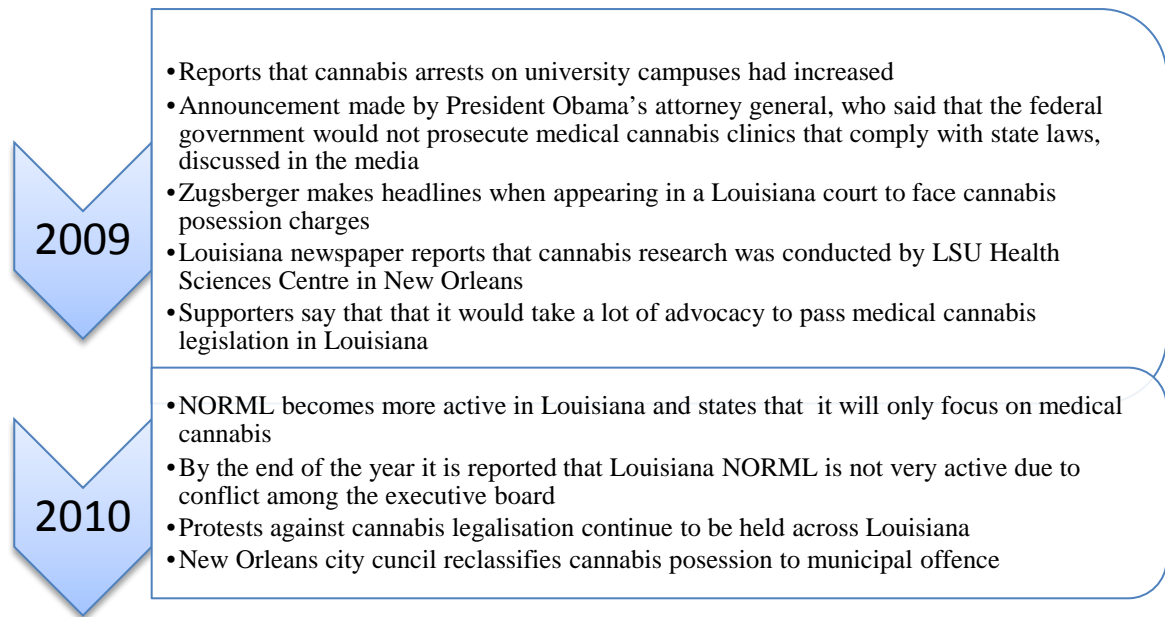


Figure 6. Time chart of medical cannabis history in Louisiana.

In 1978, Louisiana Governor Edwin Edwards signed a bill to let doctors prescribe cannabis to assist glaucoma and cancer patients (Loh-Harrist, 2002). It should be noted that using the word “prescribe” made the law ineffective, as doctors cannot legally prescribe an illegal substance to their patients (Delaney, 2010a). The law required a Marijuana Prescription Review Board to be formed to determine who would be eligible to legally receive cannabis. However, the board was never formed and the law remained ineffective. Then, in 1981 an amended version of the 1978 bill was introduced and signed into law by Gov. David Treen, but again remained ineffective. A similar medical cannabis bill was signed into law by Gov. Buddy Roemer in 1991 (Loh-Harrist, 2002). Gov. Roemer again appointed a board to oversee the implementation of the law, but no action was taken and the board was dismissed in 1992 (Delaney, 2010a). Bobby Delaney, from the Louisiana chapter of the NORML, attributed the law's failure to its conflict with federal cannabis laws (Delaney, 2010a). In Delaney's opinion, it was unclear why Louisiana's legislature passed such legislation, which ultimately proved to be useless (Delaney, 2010a). Since 1991, there has been very little political discussion

on the topic of medical cannabis (Brumble, 2009). In 2002, Wesley Sarradet, who suffered from spastic cerebral palsy and cultivated and used cannabis to help ease his condition, was arrested by agents from the River West Narcotics Task Force (RWNTF) (Loh-Harrist, 2002). He was charged with two drug felonies and a misdemeanour. While Sarradet maintained he had cultivated and used cannabis solely for medical purposes, RWNTF director Maj. Jerome Fontenot said he did not believe Sarradet's claims. James Johnson, one of the arresting officers, said Sarradet most likely did have medical problems. However, Johnson said he had a duty to uphold the law. In his defence, Sarradet said he had tried using medication such as Vicodin and morphine patches to help ease his pain and various other drugs to assist with other symptoms, but found cannabis to be cheaper, more effective, and to have fewer side effects than other drugs. Sarradet also believed he would not have been convicted had he been allowed to use his medical records and use medical necessity as his defence (Loh-Harrist, 2002).

A brief discussion of medical cannabis in the media followed Sarradet's arrest and sentencing. Dr. John Cole, an oncologist at the Ochsner Cancer Institute, said there were no good clinical trials which looked at the effectiveness of cannabis in treating medical conditions (Loh-Harrist, 2002). He also added that it could not be said with certainty that cannabis was better than other medications. However, Dr. Cole agreed that Marinol was not an effective anti-nausea medication and said he generally avoided prescribing it. If it were legal to do so, Dr. Cole said he would probably prescribe cannabis to his patients. He also did not object to his patients using cannabis to help treat their medical conditions (Loh-Harrist, 2002).

In response to Dr. Cole's statement, the NORML spokesman, Paul Armentano, said the reason there were no good clinical trials on the effectiveness of cannabis was the fact that the federal government kept tight control over the drug (Loh-Harrist, 2002).

Armentano was of the opinion that the federally produced cannabis, grown for research purposes, was of poor quality and would most likely skew tests conducted on the drug's effectiveness. He also pointed out that the pharmaceutical industry appeared to oppose legalisation of any medicine that could be grown by patients for themselves (Loh-Harrist, 2002). Robert Sharpe, a program officer for the DPA, agreed with Armentano and added that there was a need for state-level medical cannabis distribution programs the federal government would not intrude upon (Sharpe, 2002).

Media articles on the issue decreased until November 2003, when gubernatorial candidates Kathleen Blanco (D) and Bobby Jindal (R) were both said to oppose legalising cannabis for general use (Alford, 2003). Jindal also firmly opposed medical cannabis and said he would not sign such legislation. He attributed his stance to his experience at the state Department of Health and Hospitals, where he said experts believed cannabis was a gateway drug. Meanwhile Blanco, who was later elected governor, said she was always taught that cannabis was a gateway drug and did not believe in legalising it for general use. However, she believed that cannabis should not be denied to patients with some debilitating medical conditions if the drug could help alleviate their pain. Commenting on the issue, Bruce Mirken, of the MPP said that if a Louisiana governor was to consider a medical cannabis law, recommendations should be made to ensure the law was passed on a model that had proven workable in other states with an active medical cannabis law (Alford, 2003). In 2003, Dr. Robert Goidel, co-director of the Public Policy Research Laboratory in Baton Rouge said he was surprised medical cannabis was not a more popular topic in Louisiana (Alford, 2003). He said that he came to the conclusion that there was little interest in medical cannabis in the Southern states.

A city-level attempt. Following the gubernatorial election, no significant discussion on the topic of medical cannabis was noted in the media until April of 2005 when Daniel Williams, a member of the Cannabis Action Network (CAN), discussed his organisation in an article published by the Advocate, the primary newspaper of Baton Rouge (Ventura, 2005). The CAN aimed to collect enough signatures to get a cannabis initiative on the East Baton Rouge parish-level ballot. Williams said the organisation opted for a parish-level ballot initiative as they did not have a lot of funding or political influence. The initiative's aim was to change the city's ordinance to decrease cannabis possession penalties, so that a person caught in possession of the drug, no matter what offense, would only receive a fine (Ventura, 2005). The city's assistant chief administrative officer, Alfred Williams, said he would oppose any such initiative as he believed it would only make cannabis more available to youth (Ventura, 2005).

A representative of Louisiana's Partnership for a Drug Free America chapter, Janice Williams, disagreed with CAN's initiative as she believed cannabis was a gateway drug which led to more harmful and deadly substances (Ventura, 2005). Mary Roper, a special assistant in the Parish Attorney's office, looked at the proposed initiative and concluded that even if an ordinance change were passed, the local police would still be able to choose whether or not to follow the local or the state law. She believed passing such an ordinance change would lead to the city government losing money. While the CAN attempted to collect enough signatures for their initiative, Michael Blain, a spokesman for the DPA, announced the organisation would begin a lobbying initiative in Louisiana (Ventura, 2005). Blain said that Louisiana's cannabis sentencing was overcrowding the state's prisons and the state therefore needed to look at decreasing sentences for cannabis offenses (Ventura, 2005). First movement at the

city level came when the New Orleans city council reclassified cannabis possession to a municipal offense, allowing police the option to issue a summons rather than make an arrest (Eggler, 2010).

In April of 2006, the Louisiana State University (LSU) chapter of CAN was publicising its efforts to legalise cannabis (Alexander & Broussard, 2006). The organisation held yearly parties to promote its cause and set up information tables at various venues such as nightclubs and taverns in order to recruit new members and sign petitions (Alexander & Broussard, 2006; Ventura, 2005). However, by the end of 2006, CAN was no longer an official student organisation but the issue continued to be discussed in student newspapers (Alexander & Broussard, 2006; “Anti-Marijuana Laws”, 2008; Blake, 2006; Ruchalski, 2006).

Arrests draw attention to the issue. Media frenzy followed the arrest of country music star Willie Nelson, who was charged with misdemeanour drug possession (Brown, 2006; “Willie Nelson”, 2006). The musician was an active advocate for cannabis legalisation and was in possession of the drug at the time of his arrest in Saint Martin Parish, Louisiana. In 2007, he made news headlines again, when a Louisiana court sentenced him to six months of probation after he pleaded guilty to a cannabis possession charge (Burgess, 2007).

In 2008, Matthew Zugsberger, a California resident, was arrested in Louisiana on a cannabis possession charge (Campo, 2008; Legendre, 2008). Zugsberger had a doctor’s letter and a California-issued medical cannabis patient card. He said it was not his intent to break the state law as he only used cannabis to ease severe nausea caused by a spinal cord injury (Campo, 2008; Legendre, 2008). He decided to fight the charges but said he did not want to fight the system, only help refine it. Zugsberger’s aim was to

prove that his California licence for using cannabis as a medicine should be recognised in Louisiana and the rest of the U.S. states (Legendre, 2008). If deemed necessary, he planned to take the matter to the Supreme Court, but held hope that a Louisiana judge would change the state's stance on medical cannabis (Campo, 2008).

In April of 2009, it was reported that cannabis arrests on university campuses had increased (Bove, 2009). According to one article, the LSU Police Department spokesman, Maj. Lawrence Rabalais, said the department's goal was preventing students and other citizens from using the drug again. Rabalais, who was personally against cannabis legalisation, wondered what drug would be next if cannabis were legalised and where drug legalisation would stop (Bove, 2009). The topic of cannabis legalisation continued to be debated, but largely at the student level, with both proponents and opponents writing to the student newspapers to voice their opinions on the issue (Albright, 2009; Bove, 2009; Freeman, 2009; Macmurdo, 2009).

In May of 2009, Ronald Fraser, who writes for a civil liberties organisation, the DKT Liberty Project, discussed an announcement made by President Obama's attorney general, who said that the federal government would not prosecute medical cannabis clinics that comply with state laws (Fraser, 2009). As a result of the announcement, Fraser suggested that lawmakers were free to decide whether or not cannabis use for medical purposes would become legalised. The author said that thousands of ill individuals could testify that cannabis assisted them with their medical condition, while the federal government maintained that the drug had no medical properties. He therefore said it was up to the state legislature to decide whether or not medical cannabis would be legalised in Louisiana (Fraser, 2009).

Matthew Zugsberger continued to make headlines when he was scheduled to appear in a Louisiana court to face cannabis possession charges (Legendre, 2009). Zugsberger argued that cannabis helped ease his pain better than other medication did. The prosecution disputed this argument and stated Zugsberger's prescription was invalid in Louisiana. His court case was the first such case ruled upon in Louisiana. Zugsberger alleged that the Lafourche District Attorney's Office was stalling the case, as it did not want to be responsible for legalising medical cannabis in Louisiana. In response, Lafourche District Attorney Cam Morvant II said Zugsberger's claims were not true. When asked to comment on the case, NORML's executive director, Allen St. Pierre, said that illnesses did not change due to geographic location (Legendre, 2009). In August 2011, Matthew Zugsberger pled guilty to felony charges after three years of prosecution and received a suspended jail sentence (Gorman, 2011).

The week of Zugsberger's trial, an article in a Louisiana newspaper reported that cannabis research was conducted by LSU Health Sciences Centre in New Orleans (Brumble, 2009). The research was funded by the NIDA and looked into the effects of cannabis on people affected by HIV and AIDS. However, Rep. Richard Burford (R) said there appeared to be no interest in passing medical cannabis legislation, and if there were, he would not be in favour of it. Malone thought the same, and said it would take a lot of advocacy from reputable and knowledgeable medical cannabis users and supporters in order to pass medical cannabis legislation in Louisiana (Brumble, 2009).

The year 2010 saw NORML become more active in Louisiana, when the organisation's state chapter held its second Medical Cannabis Rally in Monroe (Kelly, 2010). The organisation was also set to have a booth at the Bluegoose Music Festival in August of 2010, where people could obtain NORML merchandise and sign up to become members of the organisation (Delaney, 2010f). The event's organisers and

guest speakers, including Bobby Delaney, declared the Monroe event a success and were impressed by the support the cause was receiving (Delaney, 2010d). Delaney said a number of people wanted to share their personal experiences with medical cannabis and stories about loved ones who suffered from debilitating medical conditions. He said most of the sick patients refused to use cannabis, even with doctors' recommendations, as they did not want to break the law. Delaney said that stories like these were the reason NORML Louisiana was formed (Delaney, 2010d). In his NORML Louisiana blog, Delaney encouraged medical cannabis supporters to write letters to newspaper editors in support of medical cannabis and provided a step-by-step guide on how to do so most effectively (Delaney, 2010b).

Louisiana NORML's website stated that their mission is to obtain "safe and legal access to medical cannabis for suffering patients" (Delaney, 2010e). Unlike national-level NORML, the organisation's Louisiana chapter said that they solely focus on medical cannabis. Delaney maintained that separating medical cannabis from general cannabis legalisation was important and a moral obligation they had to patients. Delaney also said that religious leaders were the organisation's valuable allies (Delaney, 2010c).

By the end of 2010, it was reported that the Louisiana NORML chapter wasn't very active due to conflict among the executive board (John, 2010). However, protests against cannabis prohibition, organised by Legalize Louisiana, continued to be held in various cities across Louisiana (Doughty, 2012; Duvernay, 2011). Legalize Louisiana was founded by Donnie Griffith, who was of the belief that cannabis should be used for medical purposes to help those suffering from medical conditions (Doughty, 2012).

Discussion

Following the federal government's establishment of the NIDA and the IND Compassionate Use Program for medical cannabis, several states including Michigan, New Mexico, Illinois and Louisiana passed laws that addressed the use of medical cannabis. Illinois and Louisiana laws became ineffective the same year they were passed, due to political debate and the threat by the federal government to remove a doctor's power to prescribe controlled substances if they prescribed cannabis. This restricted the doctors in prescribing cannabis for medical purposes, making the laws referring to a prescription by a doctor ineffective. Before the IND program ended, there were reports of shortage of federally grown cannabis and patients complaining about its quality. Subsequently, some states tried to revive medical cannabis laws, while others opted for new ones. It was an important change in drug control policy, with states choosing to take the lead and enact medical cannabis laws, against the federal government's wishes. Following the early research in the 1980s, the medicinal effects of cannabis were more widely discussed and in 1996 California took the lead and passed a medical cannabis law. In relation to the representative states discussed in this chapter, a number of issues emerged. The following section will discuss the factors that led to passing of medical cannabis legislation and will provide a chronological outline of major events that occurred at the federal level and the five representative states (Table 10).

Table 10

Chronological Account of Medical Cannabis Related Events at the Federal and State Level

Year	Federal-level	Michigan	New Mexico	Illinois	Kentucky	Louisiana
1978	Federal government IND Compassionate use program starts supplying patients with medical cannabis		New Mexico passes first state law recognising medical value of cannabis and allowing for therapeutic research into medical cannabis	Illinois passes a medical cannabis therapeutic research law The law becomes ineffective due to heated political debate and restrictions placed on it		Gov. Edwin Edwards signs bill to let doctors prescribe cannabis to assist glaucoma and cancer patients
1979		Michigan passes medical cannabis law and therapeutic research law				
1980		Reports of shortage of federally grown cannabis Patients complaining about quality of federally-supplied cannabis				
1981						Amended version of the 1978 bill signed into law but remained ineffective
1988	DEA Administrative Law Judge rules in favour of NORML to make cannabis a medicine		Medical cannabis therapeutic research program ends Cannabis remains legal for therapeutic research purposes			

1991	Federal government suspends IND Compassionate Use Medical Marijuana Program					A law similar to that of 1978 is signed but remained ineffective
1996			New Mexicans for Compassionate Use is created			
1997		Peter McWilliams attempts using medical necessity defence and is denied Suggestions that anti-drug groups are softening their anti-medical cannabis stance	Bryan Krumm from New Mexicans for Compassionate Use speaks in front of New Mexico Board of Pharmacy to gain support to reschedule cannabis			
1999	IOM study findings published Marinol moved to Schedule III of the CSA	Summary of the IOM report published in Michigan newspapers Partnership for a Drug Free America supports the report's recommendations Activists propose "Personal Responsibility Amendment" allowing individuals with debilitating medical conditions "personal amount of cannabis"	Gov. Johnson suggests that federal government should decriminalise drugs Drug czar visits New Mexico to counter Gov. Johnson's statements Activists announce potential lawsuit to reinstate the 1978 therapeutic program, Alex Valdez of New Mexico Department of Health says he will move to reinstate the law, based on Gov. Johnson's instructions			
2000		Libertarian party starts	Gov. Johnson uses line-			

		petition in Ann Arbor to stop police charging individuals using medical cannabis	item veto to remove a provision banning the use of budget money on promotion of drug legalisation and decriminalisation Gov. Johnsons says cannabis should be legalised Alex Valdez suggests modelling medical cannabis program on Hawaii's program			
2001	Supreme Court rules there is no medical necessity exception to the CSA in U.S. v. Oakland Cannabis Buyers' Cooperative	Second petition drive to place "Personal Responsibility Amendment" on ballot Michigan NORML organises activity to counter negative perceptions of the organisation Michigan senators speak against medical cannabis legislation	Drug Policy Advisory Group recommends reform of the Lynn Pierson Act and that the state's medical cannabis law should be modelled on Oregon and Hawaii's program Gov. Johnson supports medical cannabis law Opposition vocal in the media, saying Gov. Johnson is sending a bad message and lobbying lawmakers to reject some of Gov. Johnson's drug reform bills NORML begins airing radio advertisements Two medical cannabis bills introduced Poll finds majority	Brenda Kratovil seeks to use a medical necessity defence at her trial, drawing upon the 1978 law	Gov. Patton signs into law a bill allowing research on hemp	

			support for medical cannabis			
2002		Detroit Coalition for Compassionate Care starts city-based medical cannabis petition	Gov. Johnson waters down a medical cannabis bill following a Supreme Court ruling New medical cannabis bills introduced in the Senate NMDH spokesperson supports cannabis as a medicine			Arrest sparks debate- Wesley Sarradet arrested for cultivating and using cannabis, alleges it was for medical problems NORML says the reason behind o good medical cannabis clinical trials is federal government's tight control over cannabis
2003	U.S. House of Representatives rejects amendment to stop federal raids on medical cannabis patients		Compassionate Use Medical Cannabis bill introduced in the House of Representatives and defeated Gov. Johnson replaced by Gov. Richardson			Dr Robert Goidel from Public Policy Research Lab says there is little interest in medical cannabis in the Southern states Gubernatorial candidates oppose legalising cannabis for general use MPP say Louisiana cannabis laws should be modelled on a law proven workable in other states
2004		Ann Arbor medical cannabis ordinance change placed on city		Court finds that Kratovil had other alternatives to	Supporters of medical cannabis legislation	

		<p>ballot</p> <p>Governor Granholm opposes Ann Arbor Ordinance change</p> <p>Detroit voters pass medical cannabis ordinance amendment</p> <p>“Love. The Anti-Drug” launched in Detroit by director of the ONDCP</p>		<p>cannabis and was not entitled to a medical necessity defence</p> <p>First attempt at passing medical cannabis legislation with Medical Cannabis Act</p> <p>Medical cannabis bill draws media attention and proponents and opponents start speaking out</p> <p>Representative McKeon say that he sees cannabis as a cure for his HIV related pain</p> <p>City activity- Chicago Mayor supports issuing fines to individuals found to be in possession of small amounts of cannabis</p> <p>Dr Barthwell of the ONDCP tours the state and speaks</p>	organise a rally	
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				against medical cannabis		
2005	The U.S. Supreme Court upholds the power of Congress to prohibit and prosecute medical cannabis	<p>Ferndale and Traverse City pass medical cannabis ordinance amendments</p> <p>Activists start circulating petitions to legalise cannabis and regulate it like alcohol</p> <p>MPP say the Supreme Court ruling will not deter medical cannabis efforts in Michigan and other states</p> <p>Medical cannabis bill introduced in the House of Representatives, the ONDCP ask for it to be rejected</p>	<p>Media reports that the pharmaceutical industry contributed money to New Mexico political campaigns</p> <p>Legislative support for medical cannabis decreased since Gov. Johnson was replaced by Gov. Richardson</p> <p>Senate passes three medical cannabis bills</p> <p>Gov. Richardson says that if the House passes a medical cannabis bill he would sign it</p>	<p>Medical cannabis bill dies at a committee without being voted on, bill filed again</p> <p>Dr Barthwell holds seminars speaking against medical cannabis, the ONDCP director arrives in Illinois to testify against medical cannabis legislation</p> <p>Medical cannabis patients testify in favour of medical cannabis</p> <p>Law enforcement groups oppose medical cannabis legislation</p> <p>Medical cannabis bill rejected by the Human Services committee</p>	<p>Supreme Court ruling on medical cannabis restarts debate</p> <p>Reports from law enforcement that cannabis trade is a big problem in Kentucky, a leading state in cannabis cultivation</p>	<p>CAN gather enough signatures to put cannabis initiative onto parish-level ballot</p> <p>CAN hold parties at Louisiana State University to promote cannabis legalisation</p> <p>DPA announce they would begin a lobbying initiative in Louisiana</p>
2006	FDA confirms opposition to smoked cannabis for	<p>Medical cannabis bill dies</p> <p>Activist group</p>	Patients speak in support of medical cannabis	NORML say that medical cannabis legislation in Illinois	Students gather at a medical cannabis rally organised by	Media frenzy follows the arrest of country music star Willie

	medical purposes	<p>proposes making cannabis legal for those over 18 years of age</p> <p>NORML announce they will try to get a medical cannabis bill on the 2008 ballot but distance themselves from the cannabis legalisation proposal</p>	<p>Gov. Richardson announces he will include a medical cannabis bill on his agenda, House Speaker asks the governor not to include the bill on his agenda</p> <p>Medical cannabis bill dies on Senate floor</p>	<p>may be a decade away</p> <p>New medical cannabis bill introduced in the Senate</p>	<p>Kentucky chapter of NORML</p> <p>Medical cannabis debate organised at Western Kentucky University</p> <p>Students gather to promote University of Kentucky's NORML chapter</p> <p>Dispute over medical cannabis on religious grounds</p>	Nelson for cannabis possession
2007	<p>DEA Administrative Law Judge recommends allowing new source of cannabis for research</p>	<p>Flint City voters pass medical cannabis ordinance change</p> <p>Medical cannabis bill introduced in the House of Representatives</p> <p>ONDCP say medical cannabis laws would not help sick individuals</p> <p>MCCC announce they will launch a Michigan Medical Marihuana</p>	<p>Lynn and Erin Compassionate Use Act introduced in the Senate</p> <p>Opponents say medical cannabis bill contradicts federal law</p> <p>Lynn and Erin Compassionate Use Act defeated and replaced by another ac</p> <p>Gov. Richards says that signing the bill would be the right thing to do</p> <p>Allegations that Gov.</p>	<p>Increase in media reports on medical cannabis</p> <p>Medical cannabis bill introduced in Senate</p> <p>MMPAP speak in support of medical cannabis</p> <p>Church leaders speak in support of medical cannabis</p> <p>Ordinance change in</p>	<p>Students at University of Louisville debate medical cannabis legislation</p> <p>Religious leaders join the medical cannabis debate</p>	

		initiative	Richardson used medical cannabis to gain support for his presidential campaign Gov. Richardson signs the Lynn and Erin Compassionate Use Act into law	Peoria Heights for possession of small amounts of cannabis Medical cannabis documentary screened in Southern Illinois University		
2008	American College of Physicians calls for cannabis reclassification and supports non-smoked forms of medical cannabis	<p>MCCC poll reveals 67% of Michigan Voters support medical cannabis</p> <p>Michigan State Medical Society oppose medical cannabis, except for use in controlled studies</p> <p>Newspaper reports MCCC spent over \$1.1 million on campaigning, with most money coming from MPP</p> <p>Citizens Protecting Michigan's Kids is formed, opposing medical cannabis law</p> <p>Director of the ONDCP speaks against</p>		<p>NORML active in the media, responding to opposition</p> <p>Two medical cannabis bills introduced</p> <p>Survey shows that majority of Illinois voters support medical cannabis</p>		Medical cannabis patient from California arrested in Louisiana on a cannabis possession charge

		<p>medical cannabis in Detroit</p> <p>A group of local law enforcement agencies issue a statement opposing medical cannabis proposal</p> <p>Michigan voters approve medical cannabis initiative</p>				
2009	<p>DEA rejects ruling to allow new source of cannabis for research</p> <p>AMA calls on the federal government to reconsider cannabis' classification under federal law</p> <p>Deputy Attorney General says raids on medical cannabis clinics will not continue</p>			<p>President Obama assuming office sparks optimism in medical cannabis supporters</p> <p>City activity- Springfield and Cook County change ordinance in relation to cannabis possession</p> <p>Two medical cannabis bills introduced</p>	<p>Cannabis debate reignites</p> <p>Cannabis legalisation debate organised at University of Kentucky</p> <p>Gatewood Galbraith holds lectures on medical cannabis</p> <p>Galbraith says he predicts that President Obama will decriminalise cannabis use and that Kentucky could make money by making cannabis legal</p>	<p>Reports that cannabis arrests on university campuses increased</p> <p>Deputy Attorney General's statement discussed in the media</p> <p>Medical cannabis research conducted by LSU Health Science Centre</p> <p>Supporters say it would take a lot of advocacy to pass medical cannabis legislation in Louisiana</p>
2010				Politicians from	Suggestions that	NORML becomes

				<p>both parties indicate they would consider medical cannabis bills</p> <p>Suggestions that some lawmakers were worried about making politically risky voters</p> <p>Medical cannabis bill dies</p>	<p>Kentucky should consider legalising cannabis for medical cannabis as a way of raising state revenue</p> <p>Republican gubernatorial candidate says he supports legalising industrial hemp, but is not in favour of cannabis legalisation</p>	<p>more active in Louisiana and state they will only focus on medical cannabis, however NORML less active by the end of the year due to conflict among the executive board</p> <p>Protests against cannabis legalisation held across Louisiana</p> <p>New Orleans city council reclassifies cannabis possession to municipal offence</p>
2011				<p>Medical cannabis bill re-introduced</p>	<p>Galbraith set to run for governor as an independent.</p> <p>NORML say they are not advocating smoked cannabis but its medicinal and industrial use</p>	

The role of scientific evidence. A 2010 report on medical cannabis concluded that “it is widely believed that science should rule when it comes to medical issues” (Eddy, 2010, p.46). However, based on the reviews of representative states in this chapter, this is often not the case, there being a discrepancy between what the evidence tells us and how this is reflected in current medical cannabis laws. The research evidence reviewed has shown that cannabis and its constituents have therapeutic potential for a number of conditions including chronic pain, spasticity, nausea and vomiting, and as an appetite simulant for AIDS-related wasting syndrome. The laws in New Mexico and Michigan cover these and other conditions. Use of smoked cannabis is generally not the recommended route of administration, but all the medical cannabis state laws provide for the use of smoked cannabis (House of Lords, 1998; Robson, 2001; WPUCMP, 2000).

Ideally, scientific evidence should always be incorporated in selecting and implementing programs, developing policies, and evaluating progress but the review of the medical cannabis laws has shown the situation to be otherwise (Brownson, Baker, Left, Gillespie, & True, 2011). The policy process is primarily a political rather than scientific process which does not rely solely on research evidence (Anderson, 2003; Brownson et al., 2009; Brownson et al., 2011; Pentz, Marers, Schinke, & Rohrbach, 2004; Ritter, 2011).

It can also be seen that scientific evidence was presented to the general public, but mostly filtered through the media. While proponents and opponents were active in putting forward their opinions, researchers were not featured prominently in the medical

cannabis debates. According to Weiss' (1979) "enlightenment model", the impact of research on policy is not direct, but research is instead seen as one of several sources of information available to policymakers; a gradual shift in thinking over time and accumulation of research will influence policy by educating the policymakers. While those involved in the field have called for more research into medical cannabis, based on the evidence reviewed in this thesis it cannot be said that further research will play a bigger role in influencing medical cannabis laws.

“Cherry-picking”: the selective use of evidence. Weiss identified ways in which the results of policy research enter the policy field and suggested that research can be used to support positions already adopted. That is, policymakers and/or interest groups use research to support their position (Weiss, 1991). While scientific evidence may not directly inform medical cannabis policy development, the findings of the research presented in this thesis suggest that it still plays a role in the process, just not a direct one. However, scientific evidence, regardless of its quality, appears to rarely enter the debate except when it is used as ammunition. Both opponents and proponents of medical cannabis tend to use research findings as a means of attacking or defending their arguments, rather than as the key to deciding whether cannabis should be available as a medicine for specific conditions or not. For example, the IOM (1999) review outlined both positives and negatives of cannabis use and provided ammunition for both proponents and opponents to use in the medical cannabis debate. Medical cannabis supporters focused on the report's findings that cannabis has medicinal properties and that there was no convincing evidence for the “gateway” theory. Opposition, meanwhile, mainly focused on the report's findings that cannabis smoke can be toxic.

As Weiss (1991) suggested, research being used to argue a position is more likely to be influential when conflict is high and different sides are seeking justification to strengthen their own case and in legislatures where argumentation is the prevailing mode (Weiss, 1991). In Michigan and New Mexico, for example, once the findings of the IOM report were published they were used by both sides to support their arguments. Most debate in Michigan occurred in the months prior to the medical cannabis bill going on the ballot, and in New Mexico the debate intensified following the IOM report and the 2001 Supreme Court ruling that there is no medical necessity exception to the CSA.

Public opinion. Public opinion is particularly influential in states passing a law through a ballot initiative. For example, Michigan's law was passed through a ballot initiative and there was much focus on getting public support, convincing the public, and portraying the issue as being either detrimental to the public or in its best interest. In Michigan particularly, medical cannabis opponents frequently appealed to the public and portrayed their cause as being about preventing "wrong messages" from getting to the public or to certain groups. It can be difficult to argue against a vague concept such as "sending the wrong message"; in Michigan there was little questioning of what these wrong messages were and what sort of an effect they would have. In Michigan, medical cannabis opponents also accused the proponents of relying on the sympathy of the voting public, creating policies which were not in the public's best interest, and called shutting down of medical cannabis dispensaries "a matter of public safety". New Mexico did not experience the same amount of public debate or attempts at influencing public opinion as Michigan did. Illinois did experience significant public response regarding the medical cannabis issue, but since questions related to medical cannabis

cannot be placed on a ballot initiative in this state, the attempts at influencing public opinion were somewhat futile (IRI, 2009; MPP, 2013).

That is not to say that public opinion does not influence policy in states attempting to pass a law through the legislative process, as public opinion has been identified as one of the major factors politicians take into account when making policy-related decisions. Public opinion can be of importance to politicians as it is the public who determines whether the politician stays in power or not. Amongst other things, politicians are therefore concerned with what they think the public wants. This raises the question of how much of a role public opinion plays when a politician is not up for re-election.

Local governments. Over the years, local governments have become more representative of the communities they serve; this has made it easier for the electorate to raise issues and voice their opinions; and sometimes act more quickly at the local level than the state and federal governments do (Katz, 2003; U.S. Immigration and Naturalization Service, 1987). In Michigan, cities led the movement towards medical cannabis legislation. The first movement occurred in 2004, when Detroit voters passed an initiative to legalise medical cannabis in the city, despite opposition from Gov. Granholm. Ann Arbor followed, with approximately 75 percent of voters supporting amendments to the ordinance to decrease fines for cannabis use and prohibit local police from fining medical cannabis patients for possession. Ann Arbor has a history of passing cannabis ordinances dating back to 1972 (Cannabis laws in Ann Arbor, Michigan, n.d.). Despite opposition, in 2005 both Ferndale and Traverse Cities passed medical cannabis related ordinance changes. There was also city-level activity in Illinois

and Louisiana and movements towards medical cannabis legislation at the state level also coincided with attempts at city-level changes.

The people as legislators: Influence of direct democracy. Initiatives give the electorate a more direct input to the enactment of laws that were originally created as means of directly enacting public policy (Kousser & McCubbins, 2005). However, Kousser and McCubbins (2005) claimed that in the recent years the initiative process has been used as a check on the legislature and a way of pressuring it into adopting certain policies. The findings in this study indicate that using the initiative process helped pass medical cannabis laws initially in some states and helped them gain momentum in other states, eventually leading to legislatures passing such laws. Starting with California, the first seven state medical cannabis laws were passed by a ballot initiative. To date, 10 of the state medical cannabis laws were passed by a ballot initiative and 7 were passed by the legislature (ProCon.org, 2014).

Michigan's medical cannabis law was passed through the initiative process. While there were attempts to pass medical cannabis laws via the legislature, those attempts proved unsuccessful. The findings also indicate that there may be some differences between the factors which play a role in passing medical cannabis laws in states with the initiative process and those without. For example, two key factors, both external to the state legislative and executive branches, were important in moving Michigan towards its medical cannabis law. These were the actions of several cities to enact their own policies and the use of the ballot initiative. The medical cannabis cause in Michigan received more attention from national organisations such as the MPP and NORML, and also received more funding for the cause. There was also more activity in

Michigan, in terms of promoting the issue, media attention, and the number of organised state-based support groups.

The initiative process can be a powerful agenda-setting tool which can be used by interest groups, politicians and occasionally political parties to drive an issue onto the national agenda because of the widespread media attention given to some initiatives (Magleby, 1998). Even when defeated at the polls, attention can still be drawn to a particular issue, leading decision makers to discuss and comment on it. Magelby (1998) highlighted that because proponents need to meet the signature requirements to place their issue on a ballot, which requires either a large number of volunteers or funds to hire signature collectors, the initiative process is becoming less a “grass-roots phenomenon” and more dominated by large and well organised interest groups. He also highlighted the importance of campaigns in defining what the issue means for voters and said that initiative campaigns are “largely fought in thirty- and sixty-second commercials using attention-getting advertisements” that motivate citizens to either care about the issue or create doubts about the initiative (Magleby, 1998, p. 149).

Interest groups prefer to use direct initiatives to indirect and often propose and finance initiatives in multiple states to attract national attention to their issue and advance their interests (Hastings & Cann, 2014; Magleby, 1998). Getting a proposition on the ballot is a costly and time-consuming process (Cushman, 2005). Requirements for putting a proposal on the ballot vary among states, but in some states more than 500,000 signatures in support of the initiative are required. It has been argued that this process can put well-funded special interest groups at an advantage because of their access to campaign professionals, access to donor lists, and media strategies (Birkland, 2005; Braunstein, 2004; Cushman, 2005; Magleby, 1998).

Organised interest groups. While organised interest groups are more likely to have a greater access to resources and make campaign contributions in order to advance their desired outcomes, money is very important as it enables the groups to do so (Birkland, 2005; Boehmke & Bowen, 2010). Much of the research on the topic has indicated that monetary resources and a large interest group membership assist in the success of the initiative process (Boehmke & Bowen, 2010; Braunstein, 2004; Magleby, 1998). There has been a growth in the “initiative industry” that specialises in services such as petition circulation and polling. As can be seen by the Michigan reports, interest groups paid money for voter signature collection in order to place medical cannabis on the ballot. It has been estimated that 78 percent of ballot campaigns have been won by the side that spent the most money (Braunstein, 2004).

Interest groups are very important in the policy process and are an effective way for people to express their desires for policy (Birkland, 2005). Advocacy groups have been very active in states such as Michigan, where they had a persistent and prominent involvement. Michigan also experienced significant involvement from national organisations such as the MPP, the Open Society Foundation (founded by George Soros), and NORML, who played a major role in raising public awareness of the issue. Not only were advocacy groups influential in passing legislation, they also influenced what sort of legislation was passed. In his assessment of interest group influence on U.S. policy change, Grossman (2012) found that since 1945, policy historians credited 385 out of 790 significant policy enactments to factors related to interest groups, mainly general support and lobbying by advocacy organisations.

The extent to which advocates for both sides of the debate are organised may have contributed to the successful enactment of medical cannabis laws. For example, in

Michigan, MCCC successfully lobbied for medical cannabis over a period of time, while there was no specific organised opposition group until 2008, shortly before the issue was due to be voted upon. This could have given medical cannabis supporters the advantage, as the opposition only had months to prepare their stance and get actively engaged in lobbying against the initiative. The supporters also had a chance to carefully set out a strategy, and through the use of media spread their message to a wider population. But this is not the case in New Mexico, where no specific group was formed. Whether or not this was due to the process taking place predominantly within the political system, there being no ballot initiative, is a point worthy of further consideration.

Allocation of money. Another issue which can affect the policy process is the allocation of money to support either side of the argument. As New Mexico does not have a ballot initiative process, the medical cannabis debate occurred within the political system, and little external money was spent there (IRI, 2009). Michigan, meanwhile, has a ballot initiative process, which resulted in the debate occurring in the public as well as the political arena. In Michigan, in 2008 alone, the MCCC processed 99 separate donations and a large proportion of external money was spent on the media and increasing public awareness of the issue. However, money is not always used to support an issue, but can also be used to oppose it, or prevent a law from being passed. Because New Mexico does not have an initiative process, instead of money being donated to the medical cannabis cause, it was found that, in 2002, the pharmaceutical industry contributed money to new Governor Bill Richardson, which he stood to lose if cannabis became a legal treatment.

Politicians and political parties. Politicians play an important role in the enactment or non-enactment of medical cannabis policy. In states with no ballot initiative process, medical cannabis laws were passed by the legislature. While it is important to have support from politicians, the support does not come easily as there are many factors politicians need to take into account when making policy-related decisions. If the aim is to make policy making more evidence-based and educate politicians, then scientists should be aware of the political process and the factors, apart from scientific evidence, that are important to politicians and that politicians need to take into account.

A very important factor is getting re-elected. As previously mentioned, politicians need to carefully consider the timing of their decisions to support or oppose particular legislation. Politicians also need to consider the impact and benefit of their decisions, and what happens in the future. Other factors include, but are not limited to campaign funding (who provides support for their re-election and how the decision to support or oppose particular legislation will impact fund raising); how they are perceived; international standing; lobby, pressure, and interest groups; political ideology; what happened and is happening in other states; public opinion; scientific evidence; and the policy advice they receive. Scientists interested in informing policy need to consider these factors and create the sort of evidence that fits in with what politicians need and are looking for.

Politicians also need to take into account their party ideology. The two major parties have, over the years, become distinct in their ideologies and positions they assume on a range of issues (Birkland, 2005; Singh, 2003). Generally, the Democrats have typically preferred to centralise policymaking, seek to promote equality, and

support government intervention to deal with important problems. The Republicans generally wish to decentralise policymaking authority, and tend to support fiscal prudence and limiting government intervention. The Democrats are generally seen as being more liberal while the Republicans are seen as conservative. In terms of medical cannabis, the general notion is that the dominant Democrat position is to support medical cannabis, while the dominant Republican position is to oppose it (Pickerill & Chen, 2008). However, some of the states, such as New Mexico, neither support for nor opposition to medical cannabis were clearly defined amongst political parties. What the parties attempted to do was use the opponents' positions as campaign issues, while not taking a clearly defined stance themselves. The state's two last governors, one of whom was a Republican, were supporters of medical cannabis, with Gov. Johnson being very vocal on not only medical cannabis legalisation, but general cannabis legalisation as well. This was in opposition to most medical cannabis activists attempting to separate medical cannabis from general cannabis legalisation.

High-profile politicians. While there were high-profile organisations supporting medical cannabis, the issue also drew opposition from some sections of the public and some politicians, including the White House. While the ONDCP and the DEA were also active in voicing their anti-medical cannabis stance, their influence was counteracted by high-profile state politicians who supported medical cannabis. In New Mexico, two governors supported medical cannabis laws, even though they came from opposite sides of the political fence. The influence that support from high-profile politicians can have on passing legislation should not be underestimated, especially in states such as New Mexico, where there is no ballot initiative. There was also no significant support from high-profile individuals in Kentucky and Louisiana, where

public support was lower than in other states and there was no significant involvement from high-profile organisations.

Decoupling. Making a clear distinction between medical cannabis and the broader aim of decriminalisation or legalisation of cannabis for recreational as well as medical use has played a major role in the medical cannabis debate. In both Michigan and New Mexico, medical cannabis advocates made it clear that their main, limited aim was legalising cannabis for medical use only. In Kentucky and Louisiana, however, the distinction was not as clear. Decoupling has political importance, as one of the main arguments used by the opposition is that medical cannabis is a step towards legalising cannabis use in general. Making a clear distinction between these counteracts the opponent's arguments and makes medical cannabis legalisation more generally acceptable.

However, it is not always as straightforward in terms of who supports what. Some medical cannabis advocates have made it clear that their only aim is to make cannabis legal for medical purposes. Other organisations, however, have failed to make a clear distinction and sometimes tend to fluctuate between being medical cannabis supporters only and supporting general cannabis legalisation. For example, while Michigan NORML campaigned for medical cannabis legislation, one NORML representative said that the organisation wanted the drug legalised for both recreational and medical use. The MPP, on the other hand, have consistently maintained that their efforts were aimed towards making cannabis legal for medical purposes only, and that medical cannabis was not a step towards general cannabis legalisation.

Having no uniform stance on the issue has the tendency to confuse the public and raises a question of what the real goal of such organisations is. It can also influence how the public perceives medical cannabis advocates and whether or not the issue garners enough support. The advocate organisation may therefore need to compromise in order for an issue to be passed. In Michigan, for example, because the two organisations had conflicting messages, NORML took a back seat to the MCCC to counter the claims that legalising medical cannabis was a step towards legalising cannabis in general, because MCCC made it clear that their sole goal was legalisation for medical purposes only.

Use of anecdotal evidence and personal experience. While scientific evidence plays some role in the policy process, it can also be argued that the process is influenced more by anecdotal reports than by scientific evidence. The majority of evidence on cannabis as a medicine comes from personal and historical accounts (Mack & Joy, 2000). Throughout the medical cannabis debate in the states reviewed in this thesis, patient accounts and personal experience have frequently been mentioned. Patient testimonies were most prominent in New Mexico, where the medical cannabis law was passed by the legislature. Michigan also saw its share of patient testimonies, but most were presented in the media, either as accounts of their experience with the drug, or as letters written to the media. The opposition also used individuals and their personal experience to testify against medical cannabis bills.

There have also been a number of anecdotal reports published, especially in the case of cannabis' use in the treatment of glaucoma. This may have influenced the inclusion of glaucoma in the list of debilitating medical conditions cannabis can be used for in the states with a medical cannabis law, despite limited scientific evidence

supporting the use of cannabis in the treatment in intraocular pressure (ProCon.org, 2014). Only two states do not specifically include glaucoma in the list of the conditions, these being Delaware and Vermont. Interestingly, both states passed their laws through the legislature.

Anecdotal reports also have the potential to inspire further research, as was the case with the House of Lords (1998) report, which found that there was strong anecdotal evidence for cannabis in the treatment of MS and recommended urgent clinical trials. In their examination of the role of anecdotal evidence in public scientific controversies, Moore and Stilgoe (2009) found that anecdotal evidence can be used as a guide towards further investigation of an issue. Findings from this thesis indicate that politicians listen to anecdotal evidence and can sometimes base their decisions on it, more so than on scientific evidence. This could be due to the fact that anecdotal evidence is considered by some as a representation of public concerns. Anecdotal evidence also admits public involvement in development of research programs. Anecdotal evidence is also a more localised form of understanding, based on individual experience and knowledge of specific, local conditions that are not necessarily “typical” circumstances (Moore & Stilgoe, 2009).

Media. How an issue is framed in the media, or how facts and ideas are assembled into messages, can also shape how individuals interpret and evaluate the issue (Lee, McLeod, & Shah, 2008). Research also suggests that the way an issue is framed can not only direct the kind of knowledge that is activated in the person reading but also how individuals then weigh such issues as relevant attitudes and beliefs, based on what they were exposed to (Lee et al., 2008). Geographical location also plays a role in terms of the media attention given to a particular issue. In terms of medical cannabis,

one study found that in both the Southeast and the Midwest of the U.S., the news sources paid the least amount of attention to medical cannabis, comparing to the Northeast (Pickerill & Chen, 2008).

Policy research has not been clear whether media is a just a channel used to convey information or a major contributor to the policy process (Gerstl-Pepin, 2007; Shanahan, Mcbeth, Hathaway, & Arnell, 2008; Speck, 2010). In terms of medical cannabis policy, media acted as a sort of battle arena where the debate occurred, and both sides got to present their opinions. There was a tendency for two different sets of views to be presented. On one side, cannabis was presented as a harmless drug with medicinal properties, while, on the other, it was portrayed as a harmful drug which should continue to be prohibited for both recreational and medical use (Strang, Witton, & Hall, 2000). Media can also serve as a link between the people and the government and can help determine which issues are discussed and which issues the public and advocacy organisations get involved in. As a result, the media kept the public actively involved in the issue, especially in states such as Michigan, which has a ballot initiative process.

Organisations such as MPP and NORML have used media to draw attention to the issue, and have encouraged medical cannabis supporters to contact media and write letters of support. Medical cannabis opponents have been less active in using the media to promote their stance, but this could also be attributed to the funds available to them. Interestingly, the number of media reports on medical cannabis was very high in Michigan and New Mexico, but they were fewer in Louisiana, and even more scarce in Kentucky. The “hot topic”, or the topic media focused on the most, was different amongst the states too. For example, in Kentucky the focus was on hemp over medical

cannabis, in New Mexico it was general cannabis legalisation, while in Michigan the main focus was on medical cannabis. Speck (2010) argued that the media had the power to decide what they want to portray and how, and what they think is newsworthy, influencing what the general public sees.

Findings also indicate that media can filter scientific evidence, and can be selective as to what is or is not put forward to the public. As is the case in the review of the media articles in the five representative states in this chapter, Shanahan et al. (2008) found that there is limited use of science in media articles, and that the information presented is mostly based on “interest groups, elected officials, judges, governmental agencies, and business/individual citizens” (p. 131).

Overall, it can be said that the media is an integral part of politics, acting as a watchdog and an important check and balance on the political system (Gerstl-Pepin, 2007). It is the main way the public receives information on political issues and can influence how an issue is portrayed and what the focus is on. Media can also be used as a tool, enabling supporters and opponents to be persistent and active in promoting their cause. However, care needs to be taken as to how media is used, as it can be either detrimental or beneficial to a particular issue. In terms of the goal of creating evidence-based policies, scientists need to consider ways to disseminate the evidence in a way that it is picked up by the media, or go directly to the public and those who make policy decisions if there are misinterpretations and misrepresentations in the media.

The findings from the state by state review conducted in this chapter indicate that a number of factors influenced the passing and failure to pass medical cannabis laws in the five states under review. Scientific evidence is one factor, but this is often

not used in the manner scientists would prefer but rather as ammunition to support an already adopted position by those involved in the debate. Anecdotal reports of those who have or could potentially benefit from medical cannabis are important, as is the role of organised and well-funded advocacy groups. While the support of powerful politicians can be important, as in the case of New Mexico, lack of such support does not prevent laws being enacted, as the case of Michigan illustrates. It should also be noted that the decoupling of medical cannabis from wider moves to decriminalise or legalise cannabis use is important. The findings also indicate that the allocation of funds (how they are allocated, where, and by whom) can influence whether or not a law is passed, as can the level of public support for the issue in a particular state. Lastly, it is important to consider the state political system and ways of passing legislation.

The second part of the thesis (see Figure 7), as discussed in the following two chapters, used questionnaires to elicit the factors influencing policies as perceived by four groups of participants. The questions asked were derived from the literature review presented in Chapter Three and the review of five representative states presented in

Chapter Four.

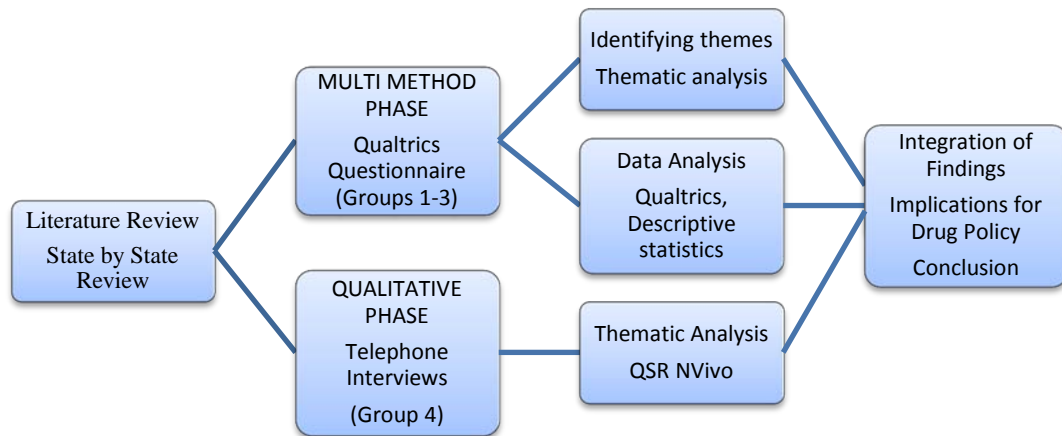


Figure 7. Explanatory study design.

Chapters Five and Six will describe the four study groups and will discuss the research design, sampling and data collection procedures, and the techniques used for data analysis for each group. Group One comprised individuals directly involved in the medical cannabis policy process in at least one of the five states referred to in the state by state review. Group Two comprised individuals participating in research in the alcohol and other drug field; Group Three comprised individuals currently participating in the political field in one of the five U.S. states; and Group Four comprised selected members of the International Society for the Study of Drug Policy (ISSDP).

Chapter 5- Group One and Group Two Study

This chapter will outline in detail how the Group One and Group Two studies were undertaken, provide details of the study design, and present findings. Group One participants were active participants in the medical cannabis debate described in Chapter Four of this thesis. Group Two participants were individuals participating in research in the alcohol and other drug field in one of the five U.S. states under review in this thesis.

A multimethod approach was employed, combining both closed-ended and open-ended questions. The multimethod approach was used in order to obtain relevant demographic information and basis statistics, while gaining an understanding of the participants' opinions, attitudes, and involvement in the medical cannabis process (Ellett & Beausang, 2002). While priority was given to the qualitative component to allow the exploration of participants' opinions on what they perceived to be the main factors that played a role in the passing or failure to pass medical cannabis laws in the states reviewed in this thesis, each method was used for a specific purpose in order to achieve an overall comprehensive understanding of the complex medical cannabis policy process.

Sample

Group One participants were selected through a non-random sampling method. They were identified as active participants of the medical cannabis movement in at least one of the five representative states, as described in Chapter Four. Any one individual who participated in the debate was invited to be a participant in the research and their opinions on what happened in the representative states they were active in were sought

to further explore the medical cannabis movement in those states and the main factors that played a role. As such, selection bias might have resulted, and will be addressed in more detail later.

Group One participants were all from the U.S. and were actively or previously involved in the medical cannabis debate. Their backgrounds included government officials, lobbyists, medical professionals, and other individuals. A total of 172 participants identified by the review were invited to participate; 147 were contacted via email and invited to complete an online Qualtrics (www.qualtrics.com) survey, and 25 were contacted by mail and sent a printed questionnaire. Of those, approximately 12 emails were undeliverable, and four participants advised that they would be unable to participate. Overall, 31 (18%) of the identified participants responded to and completed the survey. Of those, 24 completed both quantitative and qualitative portions, while five completed only the first (quantitative) portion. The results of the five participants were included in the analysis of quantitative data only.

Group Two participants were also selected through a non-random sampling method. Group Two participants were researchers who were currently conducting research funded by either the National Institute on Alcohol Abuse and Alcoholism (NIAAA), the NIDA, or the Substance Abuse and Mental Health Service Administration (SAMHSA) in one of the five states under review in this thesis. The participants were selected as it was expected that they would provide a more objective perspective on the medical cannabis movement.

Group Two participants were identified using the National Institutes of Health's reporter website (<http://projectreporter.nih.gov/reporter.cfm>), which provides names and

contact details of researchers receiving funding in specific states. The list of potential participants was created by narrowing the numbers down to those working with or funded by organisations relevant to the alcohol and other drug field (i.e. NIDA, NIAAA, and SAMHSA). A total of 209 participants fitting the selection criteria were identified and were contacted via email and invited to complete the online Qualtrics survey. Of those, 23 (11%) responded to the survey and 22 completed both quantitative and qualitative portions of the questionnaire. The results of the one participant who completed only the quantitative section were included in the quantitative only. Four individuals declined to participate because they felt that they could not be of any assistance.

Procedure

Approval for the study was obtained from the ECU Human Research Ethics Committee prior to commencing the research. The following section will describe the procedures used in the development of questions and questionnaire design and how the questionnaires were distributed. The data collection period for Group One spanned from 11th October 2010 to 14th January 2011, and involved two data collection methods: an online questionnaire and a mailed/printed questionnaire. It was anticipated that utilisation of different collection methods would increase the number of respondents and produce a rich source of data. The data collection period for Group Two spanned from 16th November 2010 to 16th January 2011, and utilised an online questionnaire as a data collection method.

Data collection methods. Online questionnaires have been increasingly used for a wide range of research topics (Van Selm & Jankowski, 2006). The use of primarily

online questionnaire surveys was deemed the most appropriate method of addressing the research questions, as it was in most cases the only form of contacting the participants. Online questionnaires allow access to a wide range of participants, especially when they are distributed across a large geographic region (Van Selm & Jankowski, 2006). Due to participants residing in the U.S., this form of data collection was deemed suitable. Using online questionnaires also allowed the participants enough time to complete the questionnaire at a time suitable to them, therefore minimising inconvenience (Van Selm & Jankowski, 2006). No identifying information apart from the respondents' IP address was recorded from the questionnaire in order to offer participants anonymity (O'Leary, 2004). A self-administered online questionnaire also avoids potential errors of data entry, as the data were automatically transferred into an Excel database.

Mailed questionnaires were deemed appropriate for those participants without an email address, or whose email address could not be found. Mailed questionnaires also allowed access to participants from different states and allowed the participants enough time to complete the questionnaire at their own leisure (O'Leary, 2004).

Questionnaire design. *Group One.* In the state by state review part of this study, journal articles, newspaper articles, parliamentary proceedings, and court documents relating to medical cannabis policies were analysed for emerging themes. These themes were then used to develop a questionnaire which was sent to Group One participants (see Appendix A). The questionnaire was divided into two sections. Participants were provided with an introduction to each section, as well as instructions on how to answer specific questions. The first section requested demographic information from the respondents, and asked questions related to participants' opinions on the medical cannabis debate in their state of residence. The questions covered

participants' opinions on medical cannabis, scientific evidence, and the importance of factors such as advocacy groups, politicians, and money in determining whether medical cannabis legislation is enacted or not. Participants were also asked to rate factors identified through the state by state review in terms of their level of influence on medical cannabis legislation. A Likert five-point scaling was used in the first part of the questionnaire. Likert scales offer a range of responses in a sequence and allowed respondents to indicate their level of agreement with a specific statement. It was implemented in order to assess participants' opinions in relation to medical cannabis and factors affecting medical cannabis policy (O'Leary, 2004).

The second section contained open-ended questions and provided respondents with an opportunity to address any other issues not covered in the first section, and voice more of their own opinions (Van Selm & Jankowski, 2006). No limit was set on the length of answers in section two. Section two contained general questions relating to the medical cannabis debate and the factors influencing medical cannabis legislation, as well as specific questions relating to factors influencing the medical cannabis debate in the five representative states.

The questionnaire was kept as short as possible and divided into sections, as research has generally found that participants are less likely to respond to large questionnaires (Van Selm & Jankowski, 2006). All participants were allowed up to three months to answer the questionnaire. Two emails were sent to participants who opted for the online questionnaire, reminding them of the questionnaire closing date; one a month after the questionnaire was emailed, and one two weeks before the questionnaire closed. The message was sent to everyone in the selected sample population and no personal data were retained. The participants were therefore advised

that the researcher was unable to identify whether or not they had already completed the questionnaire, resulting in everyone receiving a reminder email.

Group Two. The Group One questionnaire was replicated for Group Two participants. However, because Group Two participants were not identified through the state by state review as directly participating in the medical cannabis policy process, they were asked additional questions relating to their involvement or lack of involvement in the process, the form and amount of involvement, and their awareness of the issue (see Appendix B).

Questionnaire administration. Group One. Once they were identified and their contact details obtained, each Group One participant (n= 172) was sent an email or a mailed letter inviting them to voluntarily complete an online or paper-based survey regarding medical cannabis policy being passed or not passed in the U.S. The participants were provided with an information email outlining the nature of the study, and were advised that they were free to withdraw their consent and cease their involvement in the study at any time (Appendix C). One of the limitations of questionnaires is the fact participants cannot seek clarification (O'Leary, 2004). In turn, participants were provided with contact details of the researcher, two supervisors, and an independent contact (ECU Research Ethics Officer) in case they had any questions about the study. Participants contacted by mail were sent a printed questionnaire along with the information letter, and were asked to mail back their written consent along with the questionnaire if they agreed to participate (Appendix D). A coupon was included in the envelope to cover the cost of a stamp and envelope, so that participants could return the questionnaire without incurring a charge. Participants contacted by email were asked to indicate their willingness to participate in the research by sending an email to the

researcher stating their agreement. After the email confirming their willingness to participate in the research was received, participants were advised that they were free to access the online questionnaire. The hyperlink to the online questionnaire was included in the information email sent to participants.

The questionnaire was available online for three months, and participants did not have to answer the questionnaire all at once (i.e. they were able to save the questionnaire and continue at another time). A progress indicator was also used in order to indicate the length of the questionnaire and encourage participants to persist in their attempt to complete it (Van Selm & Jankowski, 2006). After the questionnaires were closed for access, the data were downloaded and stored in a password locked computer in the researcher's office at ECU. The mailed questionnaires received were manually entered into the online questionnaire and combined with those completed online. Hard copies of mailed questionnaires were kept in a locked cabinet located in the researcher's office. Only the researcher had access to mailed questionnaires and raw data stored in the computer. All participants were assigned numerical codes based on the group they belonged to and the order that they completed their interview in. For example, a Group One participant who was the fifth to complete the questionnaire was assigned the code "G1-5".

Group Two. The Group One questionnaire administration procedure was replicated for Group Two participants. Once they were identified and their contact details obtained, each Group Two participant (n= 209) was sent an email inviting them to voluntarily complete an online questionnaire regarding medical cannabis policy being passed or not passed in the U.S. The questionnaire was available online for two months.

Analysis

Data were analysed using basic descriptive statistics. The use of descriptive statistics assists with organising and summarising data and establishing a background for later findings and interpretations (Given, 2008; McHugh & Villarruel, 2003). In terms of Group One data, descriptive statistics were used to summarise demographic information and participants' opinions on medical cannabis policy and factors influencing it. The analyses were performed manually.

For the qualitative part of the questionnaire, thematic data analysis was implemented. Thematic analysis is a widely used qualitative analytic method for “identifying, analysing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). It involves the identification of themes through reading and re-reading of the data and coding of recurring themes appearing throughout (Liamputtong & Ezzy, 2005). According to Braun and Clarke (2006), “a theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (p. 82). Thematic analysis was chosen due to its flexibility, allowing the researcher to play an active role in identifying patterns within the data and selecting those which capture something important in relation to the research questions (Braun & Clarke, 2006). It also allows the researcher to describe and present data in rich detail. Group One thematic analysis was driven by the open-ended questions asked in the survey as well as the research questions, and the prevalent issues and themes are reported here.

The analysis was conducted in six phases, as described by Braun and Clarke (2006). The first phase involved getting to know the data through reading and re-reading of the survey responses, and noting down initial thoughts and ideas. Phase two involved

generating initial codes and allocating data to a particular code. Phase three involved searching for themes and assigning or grouping codes into potential themes. Phase four involved reviewing themes, and checking whether or not they work or are of relevance. Phase five involved defining and refining themes. The last phase involved pulling everything together, relating the analysis back to the research question, and producing a report of the analysis (Braun & Clarke, 2006).

An audit trail consisting of how codes and themes were developed was kept to enhance the credibility of the research (Liamputtong & Ezzy, 2005). All themes and sub-themes were reviewed and discussed with the supervisors of the project. Providing an audit trail ensures the rigour of the study, which clearly and accurately documents how the data were collected and analysed and how interpretations were made.

Results

The quantitative data from Groups One and Two are summarised in both narrative and tabular form. Findings from the qualitative data are examined, and themes derived from the content analysis are outlined and discussed.

A total of 31 (18%) out of 172 Group One participants approached answered the survey. Four (13%) respondents actively participated in the medical cannabis debate in Michigan; eight (26%) in New Mexico; 10 (32%) in Illinois; one (3%) in Kentucky; six (19%) in Louisiana. Two (7%) respondents resided or participated in the medical cannabis debate in more than one state. A total of nine (31%) Group One participants personally used cannabis for medical purposes, 22 (76%) knew someone who did, and eight (28%) indicated that they had used cannabis for recreational purposes. Overall, 14 (48%) of participants described their political affiliation as Democrat, seven (24%) as

Republican, and eight (28%) as “other” (Independent, Green Party, Libertarian, non-affiliated).

A total of 23 (11%) of 209 Group Two participants answered the questionnaire. In total, five (22%) respondents indicated that they currently conducted alcohol and other drug related research in Michigan; one (4%) in New Mexico; 11 (48%) in Illinois; five (22%) in Kentucky; and one (4%) in Louisiana. Four (17%) participants stated that they were very aware of the medical cannabis debate in their state and 14 (61%) that they were somewhat aware. Four (17%) participants were somewhat unaware of the debate; one (4%) was very unaware. In terms of their level of involvement in the medical cannabis debate no participant classified themselves as very involved; one (4%) as somewhat involved; eight (35%) classified themselves as neither involved nor uninvolved; two (9%) as somewhat uninvolved, and 12 (52%) as very uninvolved.

No (0%) Group Two participant personally used cannabis for medical purposes, seven (30%) knew someone who did, and 11 (48%) indicated that they had used cannabis for recreational purposes. Overall, 19 (83%) of participants described their political affiliation as Democrat, none (0%) as Republican, and four (17%) as “other” (Independent, Libertarian, and no voting rights).

Opinions on medical cannabis laws. Respondents were asked to indicate whether or not they “strongly agree”, “agree”, “disagree”, “strongly disagree”, or “don’t know” (Table 11) with statements relating to cannabis and medical cannabis. Upon analysis, the items were combined so that “agreement” represented both “strongly agree” or “agree” responses, and “disagreement” represented both “strongly disagree” and “disagree”. Due to the low number of responses, tests of significance were not

performed. Participant responses, concerning cannabis and medical cannabis, are grouped according to the statements used in the questionnaire.

A large majority of participants in both groups indicated that they supported legislation to make cannabis legally available for medicinal purposes; 22 (71%) Group One and 16 (69%) Group Two respondents. Twenty three (75%) Group One and 20 (87%) Group Two participants indicated that they believed that cannabis can be used effectively as a medicine. Despite believing that cannabis can be used as a medicine, 28 (90%) Group One and all Group Two participants indicated that they believed that more research is needed on cannabis as a medicine. However, more Group One (71%) than Group Two (61%) participants believed that scientific evidence plays an important role in the passing of medical cannabis legislation.

While the most common argument used by medical cannabis opponents is that cannabis is a gateway to the use of other illicit drugs, only ten (33%) of Group One and seven (31%) of Group Two participants agreed with this statement. A larger percentage of Group One (71%) than Group Two (65%) participants believed that laws to allow the use of cannabis as a medicine should be implemented in all U.S. states. More participants in both groups believed that the laws to allow the use of cannabis as a medicine should be implemented at the federal level. Lastly, 68% of Group One and 78% Group Two participants indicated that they believed that it is important to separate medical cannabis legalisation from the broader drug legalisation agenda.

Table 11

Group One and Group Two Opinions on Cannabis and Medical Cannabis Laws

Statement	Agree %	Disagree %	Don't know %
Support medical cannabis legislation	71	26	3
	69	27	4
Cannabis can be used effectively as a medicine	75	22	3
	87	9	4
Cannabis is a gateway drug	33	64	3
	31	65	4
More research is needed on medical cannabis	90	7	3
	100	0	0
Scientific evidence is important	71	23	6
	61	39	0
Medical cannabis laws in all states	71	26	3
	65	26	9
Medical cannabis laws at the federal level	81	16	3
	69	22	9
Important to separate medical cannabis from legalisation	68	29	3
	78	22	0

☒ Group One

☐ Group Two

Factors influencing medical cannabis legislation. Participants were also presented with a number of factors influencing medical cannabis policy, as described in Chapter Four. They were asked to consider how important each factor was in determining whether medical cannabis legislation is enacted or not. Participants were asked to indicate whether or not a factor mentioned was “very important”, “somewhat important”, “somewhat unimportant”, “very unimportant”, or “don’t know” (Table 12). The items were combined so that “importance” represented both “very important” and “somewhat important” responses, and “unimportance” represented both “very unimportant” and “somewhat unimportant”.

The largest percentage (97%) of Group One participants, who participated in the medical cannabis debate, indicated that media and the support of the legislative branch of the state government play an important role in determining whether medical cannabis legislation is enacted or not. Meanwhile, all (100%) Group Two participants thought that public support plays a very important or somewhat important role in determining the success or failure of medical cannabis legislation, while 28 (90%) Group One participants also indicated that public support plays a very important or somewhat important role. Twenty nine (93%) Group One participants thought that the support of the executive branch of the state government was important in determining whether medical cannabis legislation is passed or not, while 20 (87%) of Group Two participants thought the support of the executive branch was important. However, 23 (74%) Group One participants indicated that politicians were important in determining whether medical cannabis legislation is enacted or not, while more (96%) Group Two participants thought that politicians played an important role.

Twenty seven (87%) Group One participants believed that advocacy groups were important in passing medical cannabis legislation, and 26 (84%) of the participants believed that the extent to which advocacy groups are well organised was of importance. Most (92%) Group Two participants believed that advocacy groups were important and 20 (87%) believed that the extent to which advocacy groups are well organised was of importance. The amount of money available to both advocates and opponents was reported as being of importance by 22 (96%) Group Two respondents, but a lesser number of Group One respondents (71%) thought money was important.

Testimonies from people who have used cannabis as a medicine were considered important by 25 (81%) of Group One and 17 (74%) of Group Two participants. Media and the support of the legislative branch were considered important by 21 (91%) of Group Two participants.

Table 12

Level of Importance of Factors Influencing Medical Cannabis Legislation

Factor	Important %	Unimportant %	Don't Know %
Advocacy groups	87	7	6
	92	4	4
How well organised advocacy groups are	84	10	6
	87	4	9
Politicians	74	20	6
	96	4	0
Money available to advocacy groups	71	19	10
	96	0	4
Testimonies from medical cannabis users	81	16	3
	74	26	0
Support of the executive branch	93	3	3
	87	4	9
Support of the legislative branch	97	0	3
	91	0	9
Public support	90	6	3
	100	0	0
Media	97	0	3
	91	4	4

■ Group One

□ Group Two

Participants were also asked to rate factors in terms of the level of influence they believed the factor has on medical cannabis legislation (Table 13). The 10-point rating scale was used with 0 representing no influence, 5 representing some influence, and 10 representing very high influence. A total of 29 Group One and all (23) Group Two participants completed this section. Group One participants rated support in the legislature (8.28 average score) as having the highest level of influence, followed by advocacy groups (7.97) and public support (7.97). Other factors, in order of influence, included money, lobbyists, patient testimonies, media support, high-profile individuals, and opposition groups. Group Two participants rated money (8.35 average score) as having the highest level of influence, followed by support in the legislature (8.22), public support (7.87), media support (7.70), and lobbyists (7.65). Other factors, in order of influence, included opposition groups, high-profile individuals, advocacy groups, and patient testimonies.

Table 13

The Average Rating of Factors Influencing Policy on a 0-10 Scale of Influence

Factor	Group 1 Rating	Group 2 Rating
Support in the legislature	8.28 (1 st)	8.22 (2 nd)
Advocacy groups	7.97 (2 nd)	6.35 (8 th)
Public support	7.97 (2 nd)	7.87 (3 rd)
Money	7.76 (3 rd)	8.35 (1 st)
Lobbyists	7.76 (3 rd)	7.65 (5 th)
Patient testimonies	7.66 (4 th)	6.22 (9 th)
Media support	7.59 (5 th)	7.70 (4 th)
High-profile individuals	7.48 (6 th)	7.09 (7 th)
Opposition groups	6.86 (7 th)	7.35 (6 th)

The following section will present themes derived from the qualitative part of the questionnaire.

The role of scientific evidence. While it is widely believed that science should play a major role in public health policy, as discussed in Chapter Four, this is not always the case. The state by state review concluded that while scientific evidence was presented in the medical cannabis debate, it was mostly filtered through the media and was selectively used by the proponents and opponents of medical cannabis. The impact of scientific evidence tends to be diluted and a number of other factors play a role in influencing policy. When asked if scientific evidence played a role in the medical cannabis debate in their state, Group One's responses could be divided into two themes: 1) strength and recognition of the scientific evidence, and 2) how the scientific evidence is used. A consensus was hard to reach as the respondents' opinions were divided on the role scientific evidence played and continues to play in the medical cannabis debate, but 12 out of 24 Group One respondents who answered the question believed that the scientific evidence plays no role (or does not play a significant enough role) in the medical cannabis policy process. Respondents indicated that when scientific evidence does play a role, it is in informing the public and gaining support for the cause. As some of the participants stated:

"I think it plays an important role in the process, even here [U.S.], where many people are fond of hearing horror stories about gateway drugs, the medical and scientific community are given great weight, which is as it should be" (G1-24, Illinois).

"Yes. If there is no evidence, I would not support any efforts" (G1-10, Louisiana).

Group Two participants were slightly more optimistic when discussing the role of scientific evidence, with nine out of 15 participants believing it plays a role, especially in informing the public.

“Scientific evidence plays the largest role. The public needs to be confident that the benefits outweigh the risks and this can only be provided through scientific research” (G2-9, Illinois).

“The public needs to be confident that the benefits outweigh the risks and this can only be provided through scientific research” (G2-7, Illinois).

However, some respondents believed that anecdotal evidence usually takes precedence over scientific evidence, and that as a result scientific evidence rarely enters the debate, despite the fact that it is generally expected that it should play a role.

“No, it was completely ignored. They listened to anecdotal evidence to make their decisions” (G1-4, New Mexico).

“Very little- it is mainly predicated on the sick patient scenarios expounded to the legislature” (G1-27, Illinois).

“I wish it did, but unfortunately the science rarely comes into the debate” (G2-1, New Mexico).

Group Two participants also indicated that the public sometimes does not understand the available scientific evidence and that the merits of scientific evidence can often be lost on politicians and the public.

It is critical that there be sound evidence but the relative merits of evidence is [sic] often lost with politicians and the public” (G2-6, Kentucky).

“I don’t think scientific evidence plays much of a role in any debate. People don’t understand statistics and how that supports evidence” (G2-20, Kentucky).

The results also indicated that the respondents believed that scientific evidence should play more of a role than it does, and attributed its insufficient use to a number of causes such as money, education, and lack of recognition of the available scientific evidence by politicians, health professionals, and the media.

“Not enough. As long as government spends billions of dollars per year disseminating lies and refusing to recognize the growing scientific evidence, and medical schools refuse to train their students in Cannabinoid Medicine, and big Pharma [sic] keeps promoting addictive opiate analgesics, the debate will not be influenced adequately by the mounting and irrefutable scientific evidence” (G1-1, Illinois).

“The single biggest influence, either way, is a scientific ignorance, public and health care professional, of cannabis and the endocannabinoid system” (G1-17, Louisiana).

As the literature review conducted for this thesis indicated, the available evidence on medical cannabis is not as clear as it may first appear, especially when considering the smoked route of medical cannabis administration. Further to this, some

participants believed that even if the evidence was available, the policymakers may not necessarily respond to it and it may not play as much of a role as may be expected.

“Scientific evidence is valuable, but the necessary research is often lacking. Even in the face of evidence the social and political forces may not respond to this” (G2-2, Illinois).

“I am not fully informed on this topic. However, I would have to say it [scientific evidence] plays a role, but it is difficult to get ideologues to listen to science” (G2-5, Illinois).

Mixed and inconclusive research evidence. Based on the literature review presented in Chapter Three, the research evidence shows that cannabis and its constituents have therapeutic potential for a number of conditions, some for which the evidence is mixed and unclear. Most of the research evidence supports the use of cannabis in the treatment of chronic pain, spasticity, nausea and vomiting, and as an appetite simulant for AIDS-related wasting syndrome. A substantial amount of research has also been conducted on cannabis in the treatment of nausea and vomiting to suggest cannabis may have therapeutic potential. All other conditions, the literature review concluded, would require further research to be conducted before the use of cannabis as a medicine could be recommended.

The general consensus between research participants was that cannabis can be used effectively as a medicine, but the evidence can be contradictory. An overwhelming majority of participants also agreed that further research on cannabis as a medicine was needed, particularly research addressing different routes of administration, appropriate dosage, side effects, and long-term effects. Participants also believed that the scientific

evidence available at the present time was contradictory or insufficient, and as such did not influence the medical cannabis debate or policy making. It was also argued that if the scientific evidence, especially for smoked cannabis, was stronger, it would be easier to pass medical cannabis legislation.

“If we can get some comprehensive research studies, by independent researchers, that can conduct a longitudinal meta analysis, the debate would be led more by facts rather than opinion” (G1-10, Louisiana).

“The scientific evidence for smoking cannabis as an effective medicine is contradictory. If it were stronger, it would be easier to pass the legislation...I support legalization for many reasons, but the evidence is that smoked cannabis is not an effective medication (the side effects including lung damage and addiction potential far outweigh the benefits)” (G2-3, Illinois).

“I still think that there is insufficient scientific evidence to convince people outside of science which stems from problems funding this type of research” (G2-12, Kentucky).

Need for a change in federal cannabis laws. While there has been a push to reschedule cannabis from Schedule I of the CSA in order to permit medical use, the federal government has maintained its stance that cannabis is not safe and that no sound scientific studies supported medical use of cannabis (Cohen, 2010; Eddy, 2010). Medical cannabis advocates note that cannabis will most likely not be rescheduled until there is sufficient scientific evidence for its effectiveness (Marshall, 2005). Three respondents also believed that the issue of medical cannabis will only come to

prominence with changes to federal laws, and that there was need to reschedule cannabis.

“I do know that keeping cannabis as a Schedule I narcotic is WRONG and should be changed a.s.a.p. by the FDA and the DEA...” (G1-13, Kentucky).

How the scientific evidence is used. How the scientific evidence is used in the medical cannabis debate was also a common theme amongst respondents. As discussed in the state by state review in Chapter Four of this thesis, while the scientific evidence is not directly used in the medical cannabis debate, it mostly enters the debate as “ammunition”. Both opponents and proponents of medical cannabis tend to use the research findings as a means of attacking or defending their arguments, rather than as the key to deciding whether a policy should be adopted or not. The respondents in both groups indicated that individuals participating in the medical cannabis debate may not necessarily always use scientific evidence, or may use it for a specific purpose. Also, the evidence is not necessarily always used in its purest form (as published) but can be changed to suit a particular purpose.

“It provides a platform for proponents but opponents essentially ignore the information and argue other points such as that it is a slippery slope that will lead to legalization of all drugs” (G2-21, Illinois).

“...it is skewed in the direction of whichever lobby is trying to use it to support their case” (G2-1, New Mexico).

The respondents agreed that the way in which the available evidence (or lack of) is used in the process can have an influence on the outcome. One way the scientific

evidence could be used is as a way of refuting the opposition's claims and in supporting an argument.

“Primarily as something advocates can use to rebut opposition” (G1-22, New Mexico).

“...it allowed us to refute many of the oppositions' claims” (G1-6, New Mexico).

“It plays a role in that it makes the argument possible, and enables the support of many medical and public health organizations” (G1-9, Illinois).

Decoupling. Separation of medical cannabis from the issue of general cannabis decriminalisation or legalization for recreational purposes, or decoupling, was another major theme identified in the state by state review. Twenty one Group One and 11 Group Two participants discussed the separation of medical cannabis from general cannabis legalisation. Fourteen Group one and four Group Two participants felt that separating the two was beneficial to passing medical cannabis legislation and played a role in helping the medical cannabis issue move forward. The participants believed that legislation legalising cannabis for general use is more difficult to pass than medical cannabis, and had less public support. As such, keeping medical cannabis separate from cannabis legislation helped make medical cannabis more generally acceptable.

“Full legalization is a non-starter among legislators and less supported by the public. Keeping them separate is the only way to get medical cannabis passed” (G1-9, Illinois).

“I think it is more palatable if sold as an effort to improve medical options” (G1-24, Illinois).

“The U.S. is not ready for drug legalization of any sort. It is too conservative. With cannabis, it is crucial that the medicalization [sic] be separated from its abuse potential for it to have viability in any state (or the county) as acceptable policy” (G2-6, Kentucky).

“If they are separated medical cannabis will have a better chance of passing” (G2-10, Louisiana).

However, some respondents were not so sure of the impact of separation, and believed that the impact of separating medical cannabis from general cannabis use depended on which other factors were at play.

“Our bill had nothing to do with cannabis legalization, which helped it move forward. Under a previous administration however, the two were linked and it almost passed even then. So it depends on the political players, their level of support, and their level of courage” (G1-6, New Mexico).

As discussed in Chapter Four, it is not always clear who supports what, and even some advocates fail to make a clear distinction between medical cannabis and general cannabis legalisation and sometimes tend to fluctuate between being medical cannabis supporters only and supporting general legalisation. As two respondents also indicated, the national organisations went through a lot of effort to make a clear distinction between general cannabis legalisation and medical cannabis and selectively funnelled their support for organisations that were able to keep the two issues separate.

“The federal organization funding the statewide [sic] efforts were very keen about keeping the broader legalization efforts quiet. Basically, to the point of bringing myself (who was the main legalization voice for cannabis in IL [Illinois]) on as a grant recipient to work on the medical and not legalization” (G1-12, Illinois).

“Since both MPP and NORML advocate legalizing cannabis in general, their support for the legalization of medicinal cannabis in IL and other states can have both negative and positive effects to the extent that their support is funnelled through individuals and groups who are able to keep the two issues separate and not give fodder to anti cannabis groups that claim that the medical cannabis movement is just a cover for the legalization of cannabis” (G1-1, Illinois).

However, due to public perception, it is often difficult to separate the two issues. This is also made more difficult by medical cannabis opponents, who attempt to portray the two issues as one and the same.

“Opponents say they’re connected, we combat that. We’re usually able to win” (G1-3, Michigan).

“The way the bill was introduced and written it was simply a gateway to legalize cannabis in the future” (G1-14, Illinois).

“People in the general public see these two things as almost the same” (G2-12, Kentucky).

The influence of politicians. The majority of Group One participants believed that politicians played a major role in the medical cannabis debate, but Group Two participants believed that the politicians had some influence and that there were a number of factors that influenced the support or opposition of politicians. According to respondents, politicians could have a major influence on the passage or the failure to pass medical cannabis legislation as they have the ability to carry bills and pass legislation, therefore controlling the fate of the issue. However, in order for medical cannabis legislation to pass, it is important to have the support of politicians, especially in states with no initiative process.

“If the majority of legislators are in favour, it’s easy to pass. If a majority is opposed, it’s next to impossible. It’s also important to have key legislators on board such as committee chairs and those in leadership positions” (G1-5, Louisiana).

“They control the fate of the issue; our state does not have a ballot referendum or initiative process. So we have been working for so long on it that we were actually advised to register as lobbyists, and thus I registered a patient advocacy association so that we could legally lobby our legislators to pass medical cannabis legislation” (G1-12, Illinois).

“They are important, and a few small advocacy groups are working with them” (G2-2, Illinois).

While the respondent believed that medical cannabis legislation is easier to pass if there is support from the politicians, especially those well known to the public, the difficulty arises when legislators are unresponsive, or unwilling to introduce the

legislation. This can occur either because they are not in favour of the legislation or because there are other factors that they need to take into account.

“I have spent more than 2 years writing politicians all over our state, and of the few who have responded, not one supports safe and legal access to medical cannabis” (G1-21, Kentucky).

“Most legislators I’ve contacted don’t reply or are afraid to tackle medical cannabis. Our legislature is stuck on creationism in class, which indicates their level of sophistication” (G1-20, Illinois).

“Politicians from the rural portions of the state will block any effort to pass medical cannabis laws” (G2-3, Illinois).

“Politicians in my state are largely quite conservative and generally not supportive of legalization given the dire economic situation in our state and nation; legalization is a very low priority right now” (G2-12, Kentucky).

Influences on politicians’ decision making. Factors such as getting re-elected, how they are perceived, political ideology and funding are very important in influencing politicians’ decision of whether or not to support specific legislation. As suggested by the respondents, the influences may differ between the political players, but include personal opinion and perceived disapproval or approval by the public, political ideology, political timing, or fear and unwillingness to tackle a difficult issue.

“Most are conflicted by their own opinions vs. perceived disapproval by the constituents or fearful of Federal (DEA) backlash if they support the

legislation but we are forever hopeful that we will succeed in this battle”

(G1-1, Illinois).

“It is hard for politicians to support something like legalization of marijuana because it is such a polarizing topic, which might affect their re-election” (G2-5, Illinois).

“Politicians lean any direction that gets them elected. The populace needs educating & that’s difficult in a state that ranks 49th in education” (G1-21, Kentucky).

As discussed in Chapter Four, the general notion in terms of medical cannabis is that the dominant Democratic position is to support medical cannabis, while the dominant Republican position is to oppose it. Respondents agreed that political ideology could influence whether or not medical cannabis legislation is supported. However, in some states, such as New Mexico, the support for medical cannabis is not necessarily defined by political parties, and bipartisan support was believed to be one of the reasons for the success of New Mexico’s medical cannabis law.

“...especially bipartisan support” (G1-6, New Mexico).

“Dems favour....Repubs don’t” (G1-11, Michigan).

“Republican Governor Johnson had fought for it, but he was blocked by the Democratic legislature who wanted to pass it, but felt that Republican legislators would use it against him. Having Democratic Governor Richardson in office, who also supported the legislation,

created a safer environment for legislators and Democrats got behind the bill” (G1-19, New Mexico).

“Pretty straightforward- Dems [Democrats] are (mostly) in favour though not all. Republicans are fairly adamant in their opposition” (G2-21, Illinois).

Rather than scientific evidence driving their decision making, medical cannabis can be a personal issue for some politicians. Some support the legislation because they have used medical cannabis themselves or know of someone who has, and their personal experience rather than scientific evidence drives their support. As Black (2001) said, policymakers can have their own goals for policies other than scientific evidence and clinical effectiveness, and can focus on other types of evidence such as personal experience.

“We have to deal with lots of politicians; we see their human side.

Cannabis gets personal, so the politicians do as well” (G1-20, Illinois).

The people as legislators: Influence of direct democracy. The state by state review in Chapter Four indicated that using the initiative process helped pass medical cannabis laws initially in some states and helped them gain momentum in other states. To date 10 of 17 state medical cannabis laws were passed by a ballot initiative and in some states may not have passed, or passed as quickly, if the attempts to pass a medical cannabis law were only focused on the legislative process. In Michigan, for example, several attempts to pass a medical cannabis law via the legislature were unsuccessful until the issue was placed on the ballot and passed.

The results from Groups One and Two indicated that a distinction needs to be made between states with a direct democracy process (i.e. ballot initiative) where constituents are given the power to pass laws, and the states where the legislative decisions are left up to the legislators. The general consensus amongst participants was that the two processes have a differing influence on medical cannabis policy. Participants believed that ballot initiatives were important as they were able to take politicians out of the equation, were easier to pass, helped move the issue along, and allowed people to make a decision regarding a particular law. However, the difficulty arises in states that do not have the initiative process, and the attempts to pass a medical cannabis initiative need to occur at the legislative level.

“If the state has a hostile legislature but a ballot initiative process, you can go around the legislature. It can be expensive though depending on the number and size of media markets” (G1-3, Michigan).

“I think the ballot initiative was crucial for getting the medical marijuana on the books. The legislature never would have gone for it” (G2-16, Michigan).

“...they allow the issues to percolate to the top at the initiative of the people rather than the legislators” (G2-6, Kentucky).

“It may assist with moving the legislature along” (G2-7, Illinois).

According to the respondents, states with ballot initiatives usually fare better on passing legislation than states without, which must rely on the legislators to engage in a medical cannabis debate. However, only 17 U.S. states and the D.C. have an initiative

process, which means that 27 states must rely on their state legislatures to enact medical cannabis laws.

“Without a ballot initiative process, Louisiana residents are left to depend upon legislators to even engage in a debate regarding medical cannabis. As a result, there is no debate” (G1-2, Louisiana).

“In initiative states, medical marijuana almost always passes. When it must be approved by politicians, it’s always a struggle, and Illinois was a classic example” (G1-9, Illinois).

“Obviously, states that allow voter initiatives fair [sic] much better on passing this type of legislation” (G1-21, Kentucky).

“I feel that the initiative process is a much easier way to get medical cannabis available to patients since politicians generally feel the issue is too controversial and don’t want to take a tough vote like this” (G1-12, Illinois).

However, as much as they can be beneficial, both processes are perceived as having their disadvantages, such as being costly and prone to abuse, and can put well-funded special interest groups at an advantage because of their access to campaign professions, access to donor lists, and media strategies (Birkland, 2005; Braunstein, 2004; Cushman, 2005; Magleby, 1998).

“Ballot- Big money will be used to campaign for the passage of the initiative, however it does allow the electorate to have a say as to what will be passed. Drawback is there is not the big money to campaign

against the initiative. Legislative branch- leaves the decision of millions in the hands of a very few. They become educated as to the benefits this cannabis will have for “patients”. They forget to look at the other side of the debate from law enforcement, prosecutors, treatment and prevention professionals” (G1-4, New Mexico).

A dubious method [ballot initiative] in some cases due to manipulation of voters” [G1-25, Louisiana].

“As a former Californian, I’d say that ballot measures tend more often to be harmful than helpful, so I would not advocate for them as a means of passing legislation” (G2-15, Illinois).

The influence of national-level advocacy organisations on state-level policy.

State by state review in Chapter Four found that organised interest groups are more likely to have greater access to resources and make campaign contributions in order to advance their desired outcomes. Money was very important as it enabled the groups to reach a wider audience and have a bigger impact. In the states with medical cannabis laws, national organisations such as NORML were very prominent and engaged in a range of activities from lobbying to organising television and radio advertisements to support their cause. The majority of Group One and Group Two respondents agreed that the involvement of national advocacy organisations, such as MPP and NORML, had an impact on medical cannabis policy; mostly positive, some detrimental. The responses indicated that one of the main contributions of the national organizations was money.

“They have a very strong presence in our state and funded staff to lobby the Governor and legislature to pass the legislation. I imagine they also

paid for some of the individuals who testified in support of the legislation” (G1-4, New Mexico).

“They were important mainly in funding and keeping databases current. Also providing qualified spokesmen” (G1-16, Louisiana).

“MPP played the leading role, financing and organizing the lobbying campaign and media efforts” (G1-9, Illinois).

“Most states are convinced by the PR not the data. PR takes money, hence national pro use groups are powerful” (G2-11, Michigan).

“These groups are very prominent in MI [Michigan]” (G2-17, Michigan).

As discussed in Chapter Four, interest groups prefer to use direct initiatives and carefully consider where they focus their efforts (Boehmke, 2002). The approach and activities of most interest groups is determined by the group’s mission, strategic goals, objectives, and strategies and tactics (Leiden, 1995). Research has found that states with an initiative process have more interest groups (Boehmke, 2002). While they may have contributed to the debate and passing of medical cannabis laws in some states, national organisations such as MPP and NORML did not actively participate in all states and appeared somewhat selective about the states they put their resources into. For example, MPP played a large role in supporting the medical cannabis effort in Michigan, donating money as well as organising television advertisements and being active in the newspaper discussion of the issue, but were not very active in New Mexico. The participants also noted that MPP and NORML put resources into states such as Michigan, while they did not have a strong presence in other states.

“MPP funded our initiative” (G1-11, Michigan).

“I was leader of the state office of DPA, we led the fight. NORML was very helpful with information requests and behind-the scenes background information. MPP did not play a role” (G1-6, New Mexico).

“There is no NORML office in Coonville, Kentucky anymore & I believe they have not targeted Kentucky as a prudent place to spend their limited resources” (G1-21, Kentucky).

“NORML played almost no role in Michigan. That law was written, funded, and passed by MPP” (G1-3, Michigan).

“There are many of us who are either members of NORML Louisiana or are advocates...we are in our infant stage, though, and need more capacity-building and technical assistance from our national office” (G1-13, Kentucky).

Interestingly, while Group One participants strongly believed that the national organisations played a role in the medical cannabis legislation, Group Two participants were not unanimous in this belief, some not even being aware of the presence of these organisations. Notably, the respondents were from states such as Kentucky and Illinois that do not have medical cannabis legislation or have not considered one. Also, the medical cannabis debate in states such as Kentucky has not been very active.

“Probably very little except to the extent that they could influence local politicians” (G2-6, Kentucky).

“Since I have not heard of them, perhaps very little” (G2-20, Kentucky).

“None that I can see” (G2-21, Illinois).

The perception of the national organised groups can also have an influence on the role that they play. That is, if they are perceived as negative or supporting a cause not favoured by the general public, it may have a detrimental effect. More specifically, if the organisations were perceived as supporting general cannabis legalisation, their support detracted from the issue of medical cannabis:

“They pushed to convince people that they were being denied a real treatment. It should be noted that the effort in California to make personal use (not medical) failed because of the public’s views of these organizations. They were simply too facile” (G2-11, Michigan).

“NORML’s primary focus on legalization in more progressive states provides little support for efforts to advance medical cannabis law reform in Louisiana” (G1-2, Louisiana).

“They are legalization activists talking medicine and are bad at it” (G1-17, Louisiana).

“They create problems because they are not reputable organizations” (G1-30, Illinois).

Higher level opposition: The federal government. While the state by state review in Chapter Four showed that the federal government, and more specifically the ONDCP, were active in Michigan and New Mexico when the medical cannabis movement in those states gained momentum, the federal government was not identified as playing a major role in passing or failure to pass medical cannabis laws. The majority

of Group One study participants, however, saw the federal government, and more specifically the ONDCP, as having both positive and detrimental effects on the medical cannabis legislation process. It was noted that while opposing the law, the federal opposition to medical cannabis in states such as Michigan was not very effective.

“ONDCP opposition is always a problem. They work with the opposition, both overtly and covertly. In Illinois, a former ONDCP official, Andrea Barthwell, also played a visible role in opposition” (G1-9, Illinois).

“Diminishing effect, as most educated people realize that the War on Drugs is actually a War on Drug Users and is propped up by what I call “The Big Lie” that cannabis deserves to be a Schedule I narcotic and is more harmful than legal intoxicants, such as alcohol or nicotine” (G1-1, Illinois).

“They opposed the law, but weren’t terribly vocal or effective” (G1-3, Michigan).

While participants believed that the federal government can influence state politicians and their support of medical cannabis legislation, their direct involvement in the state debate was reported by a number of Group One participants. Different tactics such as using expert testimony, prominent public figures and threatening funding were reported as being used by the federal government officials to oppose state medical cannabis bills.

“ONDCP sent an expert witness to testify in opposition to the legislation. Along with all the other experts, the policy makers turned a deaf ear to

the realities of legalizing marijuana. ONDCP testimony was helpful”

(G1-4, New Mexico).

“We’ve had former DEA head Bensinger testify against us numerous times over the years and even appearing on a televised debate against myself. I recall Walters coming to Illinois to testify once too. Other than brief appearances and working behind the scenes not much involvement I’d imagine” (G1-12, Illinois).

Group Two participants reported that the federal offices have constantly opposed medical cannabis legislation, but that their presence usually had little or no influence. Participants from states such as Kentucky and Louisiana, in particular, did not believe there was strong federal opposition to cannabis in their states.

“The ONDCP is pretty quiet on this issues [sic], even though they paid the IOM for the Marijuana as Medicine study. The ONDCP’s real task is to formulate drug abuse policy. General McAfree decided to let the medical issue alone” (G2-11, Michigan).

“Slightly more than MPP, etc? not aware of their involvement in my state either so practically zero effect” (G2-20, Kentucky).

“None to my knowledge but the federal offices have remained consistently opposed to such legislation” (G2-6, Kentucky).

When they are active, participants in Group Two believed that federal offices such as the ONDCP can act as a voice of authority and back up opposition groups in the state.

“Much- voice of authority” (G2-10, Louisiana).

“Provides cover for those in opposition” (G2-21, Illinois).

In some cases, while not having a direct impact and preventing legislation from passing, the presence of the federal officials and federal offices such the ONDCP can have a reverse effect, and ignite the efforts of the advocates. As one participant described:

“He [the Drug Czar] and his entourage visited our statehouse; he spoke to the panel; left the room before anyone on our side spoke; we lost the vote. His presence (and his twenty person entourage) worked to motivate our patients. He also, by his presence, let the statehouse know we must really be a threat if a representative from the federal government came to Springfield Illinois” (G1-20, Illinois).

The effectiveness and organisation of state-based organised groups. The extent to which advocates for both sides are organised has been found to contribute to the successful enactment of medical cannabis laws. The state by state review found that in Michigan, state based organised groups had a persistent and prominent involvement in the medical cannabis debate and lobbied for medical cannabis over a period of time, while the only state based organised opposition group was not formed until shortly before the medical cannabis issue went to ballot. The influence of state-based organised lobby and advocacy groups had been frequently mentioned by the Group One respondents, with eight out of 14 respondents believing that they played a role in ensuring the passing of medical cannabis laws in some states.

“These groups were effective in getting the legislation passed and spent significant amounts of money to ensure its passage” (G1-1, Illinois).

“We won the debate, hands down. I don’t think it would’ve passed without a well-organized group” (G1-6, New Mexico).

“It wouldn’t be possible to introduce legislation and have a chance to pass this without lobby groups” (G1-24, Illinois).

However, respondents, and in particular those based in states with no medical cannabis law, believed that state-based organised lobby groups had little to no influence.

“It was minor. The ones that existed were largely funded by MPP. They were useful allies, but have little impact without MPP’s resources. The major thing they contributed was connections with local patients, doctors and other visible supporters” (G1-9, Illinois).

The majority of Group Two participants was not aware of state-based organised groups in their state, and, along with some Group One participants, believed that state-based organised groups were generally related to the national efforts, and would not have been successful without the support of national organisations.

“If we lobby groups in my state, they seem pretty invisible” (G2-12, Kentucky).

“They have not been well publicised in the media and so I am guessing very little” (G2-21, Illinois).

“Generally they are related to the national pro efforts” (G2-11, Michigan).

However, both Group One and Group Two participants noted that it was important for groups both supporting and opposing medical cannabis legislation to be well organised and work strategically, as it can influence how they are perceived by the public and the policymakers.

“...they need to work carefully and strategically. The more professional the group the better” (G2-2, Illinois).

“...the more you organize the better your chances are of being successful. It isn’t only the most important causes that get attention but those that have publicity and money” (G1-24, Illinois).

“I don’t think it would’ve passed without a well-organized group” (G1-6, New Mexico).

Lack of good organisation can in turn be detrimental to a particular side of the debate. For example, a respondent from New Mexico (a state with a medical cannabis law) said:

“The opposition had more bodies (i.e. law enforcement) but they weren’t as well organized” (G1-6, New Mexico).

The perceived presence of state-based organised groups. According to the respondents, the effectiveness of state-based organised groups was limited by their level of presence (or lack of) in the states and their perceived effort to pass medical cannabis legislation. In states such as Kentucky, there are no state-based medical cannabis

advocacy groups, and the student-run NORML chapter also experienced problems and eventually ceased operation.

“I’m not aware of a single state lobby group in Kentucky lobbying for cannabis law reform. There is no NORML chapter still in operation here & no other organized group has considered Kentucky a favourable place to spend their resources” (G1-21, Kentucky).

“There are none in Louisiana” (G1-12, Louisiana).

The role of money. While the state by state review found that the allocation of money to support either side of the argument can affect the policy process, the respondents were divided on how significant the influence of money was, as it differed amongst states. This was also noted in the state by state review, which found that more money was spent in Michigan which had the ballot initiative process than in New Mexico which does not have a ballot initiative process and where the medical cannabis debate occurred within the political system. The respondents also believed that medical cannabis proponents spent more money than opponents, and this was also found to be the case in the state review of Michigan.

“Not enough money is funnelled to effective advocates for medical cannabis by either state or national organizations, such as MPP, DPA, etc. NORML is basically a non-profit run by mostly volunteers and is of limited effectiveness in this debate as described before. Philanthropists are not yet supporting medical cannabis legalization in IL they [sic] way they did in CA and other early MC states” (G1-1, Illinois).

“Until a level playing field is established in terms of funding for advocacy groups opposed to the legalization of cannabis, states will continue to fall prey to the pro-cannabis funded movement” (G1-4, New Mexico).

“I don’t believe much money is spent for OR against MMJ [medical cannabis] in Ky [Kentucky]” (G1-21, Kentucky).

“It’s always about the money to be successful” (G1-11, Michigan).

“Whichever lobby has the most money rules the day” (G2-1, New Mexico).

How money is used. Those respondents who believed that money did play or continues to play a significant role in the medical cannabis debate frequently gave consideration to how that money is used by individuals both supporting and opposing the legislation. The respondents stated that some of the ways that money can be used is to influence opinions and fund efforts to support or oppose the legislation.

“Money enabled the hiring of professional lobbyists and assembling an effective lobbying and advocacy effort. Almost nothing gets passed in U.S. state legislatures without some money behind it” (G1-9, Illinois).

“Money has been a crucial resource in many ways; the hiring of lobbyists who have the relationship with legislators to get the bill introduced, funding patients’ presence at the Capitol, and supporting advocacy efforts” (G1-12, Illinois).

“Key politicians are being bought off by marijuana advocates” (G1-7, Illinois).

City and county-level change. As noted in Chapter Four, over the years local governments have made it easier for the electorate to raise issues and voice their opinions, and at times issues at the local level have been acted on more quickly than at the state and federal level. In Michigan, first medical cannabis changes occurred at the city level, and there was also city activity in Illinois and Louisiana. The majority of respondents in this study believed that city-level change showed potential and helped pave the way for future, larger-scale change, and are a good place to start in terms of gaining momentum for the issue.

“I think they begin to open up the debate and they are a good place to start” (G1-6, New Mexico).

“They clearly helped pave the way and illustrate public support. This was most obviously the case in Michigan” (G1-9, Illinois).

“There is less money involved in terms of lobbyists and the cities have been able to avoid any influence from either side. City councils are smaller than the general assembly and that is easier to change too” (G1-12, Illinois).

“City-level changes can have a huge impact and did in our area” (G2-16, Michigan).

However, the city-level changes also appeared to be linked to states with an initiative process and states where there is already medical cannabis activity at the state

level. Those states where there was little medical cannabis movement at the state level appeared to have little to no movement at the city level.

“In New Mexico this was not an issue. It was a top-down process. The debate began with Johnson and gained momentum with Richardson”
(G1-19, New Mexico).

“No city in Louisiana has even addressed medical cannabis issues” (G1-2, Louisiana).

“I’m not aware of any city level initiatives in Kentucky, although I did pose the question to our new Mayor. He, like most politicians, only considered if the majority of voters would approve of a low enforcement law” (G1-21, Kentucky).

Participants also believed that passing medical cannabis laws or ordinances at different levels would make the medical cannabis issue more complex and city-level changes would not necessarily lead to a successful implementation at the state level.

“It would be a good start. But what happens in Chicago sometimes does not affect downstate but if a few smaller progressive cities would do it that would help” (G2-7, Illinois).

“I think it’s ridiculous to make changes at the city level. It’s too confusing and piecemeal” (G2-1, New Mexico).

“City law cannot override state law so little impact likely” (G2-20, Kentucky).

“I think it is highly unlikely to play a role in this state” (G2-6, Kentucky).

On the other hand, seven participants did not think separating the two aims had much (or any) influence for a number of reasons, including it being confusing and the influence of state law.

“I think it’s ridiculous to make changes at the city level. It’s too confusing and piecemeal” (G2-1, New Mexico).

Difference between states. As can be seen from the other themes mentioned previously, medical cannabis advocates and opposition groups are more active in some states than others and tend to choose where they will allocate their time and resources. According to four Group One respondents, factors such as debate, public support and perception, and the influence of other states may account for this. As mentioned in Chapter Four, it is also generally believed that there is little interest in medical cannabis in the Southern states, while the initiative process tends to be most popular in the Western states, but is not exclusively a western phenomenon (Matsusaka, 2005).

“There is no NORML chapter still in operation here & no other organized group has considered Kentucky a favourable place to spend their resources...Kentucky is a rural, religious, and uneducated state. Change is slow to non-existent. I’ve written my legislators numerous times & have had no response” (G1-21, Kentucky).

“Louisiana lawmakers mirror those of other deep southern states, and ignore medical cannabis as potentially beneficial to countless suffering patients.” (G1-2, Louisiana).

Need for activity. Lack of campaigning in a particular state generally leads to lack of funds and debate on the issue. In the state by state review, limited campaigning and debate was observed in states such as Kentucky and Louisiana, and as a result there was little public support. Meanwhile, states such as Michigan had a well organised, persistent medical cannabis effort, which eventually resulted in passing of the medical cannabis law in the state.

“...there is little medical cannabis debate in Kentucky. There is no television coverage except National Programming & the Newspaper rarely covers stories or medical breakthroughs” (G1-21, Kentucky).

“I heard nothing- pro or con during the last election cycle” (G2-10, Louisiana).

“Very little debate to my knowledge” (G2-20, Kentucky).

While there is need for activity and persistence in efforts, timing is also an important factor to consider. In the state by state review, timing was an important factor. It was noted that timing of political events does not happen by chance and politicians attempt to influence the timing in order to maximise benefits and draw public attention to a particular issue or draw it away. In New Mexico, for example, Gov. Johnson voiced his support for medical cannabis in his last term as a governor, when he was not up for re-election and the issue was not going to affect him being re-elected. As one Group One participant wrote:

“The politicians don’t want to do anything closely controversial anywhere near an election, and State Reps. in Illinois run for re-election

every two years. Party leaders will only do it when it is the least problematic for them in terms of losing seats” (G1-12, Illinois).

Media influence. The state by state review in Chapter Four found that how an issue is framed in the media can shape how individuals interpret and evaluate the issue (Lee et al., 2008). The media has also been found to be of particular influence in the democratic process. In states such as Michigan, the media kept the public actively involved in the issue. In terms of medical cannabis, the media was a forum where the proponents and opponents could debate and present their opinions. Five Group One respondents said that media presence and coverage can have an influence on the outcome of medical cannabis policy. How a particular issue is covered and portrayed by the media can also influence the outcome, with the media also having the ability to “cherry-pick” scientific evidence that is presented. No Group Two participants discussed media as a factor of influence in the medical cannabis debate.

“The mainstream media gives little attention to scientific evidence regarding cannabis. I’ve written & had published numerous letters in Ky [Kentucky] largest newspaper, the Courier-Journal, calling them out on their lack of coverage. They didn’t even cover Dr Tashkin’s 2005 cancer study(except for my letter) that should be front page news in a state with one of the highest cancer rates” (G1-21, Kentucky).

“We end up losing momentum whenever there is significant media coverage that distorts the aim of the effort and instead tries to paint it as more of a drug legalization effort” (G1-24, Illinois).

In terms of medical cannabis, the participants also indicated that the media can work in reverse, with insufficient media coverage leading to less public support in states.

“...there is simply not enough media coverage to even encourage public debate, much less support” (G1-2, Louisiana).

The importance of knowledge/education. In Chapter One, it was discussed that scientific evidence can have an impact on policymaking, but not necessarily in the immediate or direct way that would be expected by the researchers (Black, 2001; Brownson et al., 2009). It was also noted that it was not enough for relevant research to just be available as evidence itself may not necessarily be used by the participants in the process or influence decision making (Birkland, 2005; Brownson et al., 2009; Hanney et al., 2003). Those involved in the medical cannabis debate in the states reviewed in this thesis believed that both physicians’ and politicians’ lack of knowledge about the medicinal properties of cannabis influenced the medical cannabis debate. The responses indicated that it is not enough to simply have scientific evidence, but that it needs to be actively used to educate individuals and groups involved in the policy process, such as politicians and the general public.

“The biggest factor influencing the absence of implementable law in Louisiana is lack of education regarding the medical value of cannabis... Even doctors lack knowledge of its medical value. Because it is illegal, they tend to ignore scientific/medical research study reports proving it to be a reasonably safe and effective medicine” (G1-2, Louisiana).

“We have had some decent progress in Illinois in attempting to implement medical cannabis, largely due to an effective push by advocacy groups that are supported by scientific and medical professionals” (G1-24, Illinois).

However, the respondents also acknowledged that there were obstacles to educating individuals involved in the process, such as the need for more comprehensive studies and refusal by some physicians to share their data.

“I am also trying to organize a North American Community-Based Clinical Cannabis Research Network to achieve the basic aims of developing evidence based treatment guidelines...but encountering much resistance from the major MC physicians, particularly in CA, who don’t want to “share” their data, etc.” (G1-1, Illinois).

The influence of old laws. Four out of five states reviewed in Chapter One had medical cannabis or therapeutic research laws passed in the 1970s, which have not been effective. Some states such as New Mexico attempted to reinstate the old state law by making amendments to it, while states such as Michigan did not attempt to reinstate the old law but instead tried passing a new one. Group Two respondents did not discuss old state laws, but Group One respondents believed that the focus should not be on creating a new medical cannabis law, but reinforcing the already existing one.

“The problem isn’t making new laws, but honouring the current laws” (G1-5, Louisiana).

“We’ve had an “inoperable” medical cannabis law in Illinois since 1978. It is only a lack of political will to create a workable law...We

don't need an initiative ~ we need Section 11 of the current law enforced" (G1-20, Illinois).

However, there were also respondents who believed that the old laws were an impediment to passing new medical cannabis legislation.

"...the State of IL DID pass a medical marijuana law in, I think, 1971, but since it called for "prescription" of cannabis and was never enacted through regulations, etc., it never went into effect. I think that having this history in IL is a definite barrier to passing a reasonable MC law currently and we would be better off if the earlier law had never been enacted" (G1-1, Illinois).

The role of patient testimonies. It has been argued that the policy process can sometimes be more influenced by anecdotal rather than by scientific evidence. In terms of medical cannabis, the majority of evidence on cannabis as a medicine came from personal and historical accounts (Mack & Joy, 2000). In Michigan, for example, patient testimonies were prominent in the media, while in New Mexico patient testimonies were heard in the Senate and House of Representatives when there were attempts to pass a medical cannabis bill. There were also professionals and individuals testifying against medical cannabis to support the opposition's arguments of negative effects of medical cannabis. Four Group One respondents said that patient and expert testimony can play a role in determining the outcome of legislation. For example, the ONDCP using professional/expert witnesses to testify against medical cannabis legislation. As one respondent put it:

“The Administrative Branch, Legislature, advocacy groups and patient testimony were the most compelling efforts and support that lead to the passing” (G1-4, New Mexico).

The opposition of the law enforcement lobby. While the law enforcement lobby was not identified as one of the major factors in the medical cannabis debate in the state by state review, four Group One respondents from states that do not currently have a medical cannabis law believed it was one of the major factors preventing medical cannabis laws from passing in their states as it had the potential to influence legislators.

“Cowardly legislators in fear of the law enforcement lobby (the latter should have been named as a factor in the prior sections – it is the most important source of opposition)” (G1-9, Illinois).

“Illinois Partners Providing Marijuana Education and the law enforcement community were able to influence the legislators” (G1-30, Illinois).

Public opinion and support. As can be observed through the themes discussed previously, public opinion can have an influence on the legislators and their decision to support or not support particular legislation. Public opinion can be particularly influential in states with an initiative process. As noted in the state by state review, medical cannabis opponents and proponents in Michigan frequently appealed to the public to support their cause, especially in the months preceding the placing of the issue on the ballot. Five Group One respondents believed that public support played a major role in the medical cannabis policy process. However, they also believed that public support played little role in states with only the legislative process.

“Most important in Michigan was public support” (G1-3, Michigan).

“Legislation on this issue, sadly, is an illustration of how little role public sentiment often plays in the legislative process” (G1-9, Illinois).

Religious organisations. While the involvement of religious organisations was reported in the state by state review, especially in Kentucky and Louisiana, it was not identified as a major factor. In this study, only one Group One respondent stated that religious organisations had a strong influence on medical cannabis legislation. The respondent also indicated that if the medical cannabis issue was brought up in the state, there would be opposition from conservative religious organisations.

“If it were to be brought up by advocates, I would assume there would be push back from opponents (particularly from conservative religious organizations)” (G1-15, Louisiana).

While Groups One and Two were analysed and their findings reported, an additional group, Group Three, was excluded from analysis. The following section will describe the group and the reasons behind its exclusion.

Group Three

Group Three participants were drawn from individuals currently involved in the state government sector (i.e. the governor, Representatives and Senators) in one of the five states reviewed. The participants were identified through publicly available sources such as government documents and state government websites, and online searches. Participants were selected for their involvement in the government sector, and their experience in the policy process. As they were not identified as being directly involved in the medical cannabis debate, it was anticipated that Group Three participants would

be able to provide an objective appraisal of the debate and factors influencing medical cannabis legislation. A search of the literature did not provide a clear guideline for the response rate in the interviews of politicians; therefore a specific response rate was not expected. However, being guided by the response rate for Group One and Two participants, a response rate of at least 10% would have been deemed acceptable to discuss in this thesis.

A total of 625 potential participants with publicly available email addresses were contacted via email and invited to complete the online Qualtrics survey. Of those, three responded to the email invitation and stated that they would be unable to participate. A total of 5 (0.8%) participants completed the online survey. As the number of responses was low it was concluded that the sample would not be representative of the group (politicians) as a whole, and Group Three was therefore excluded from further analysis.

Perhaps an explanation for the low response rate can be found in the literature which suggests that elites such as politicians are unwilling to reveal their true beliefs in structured questionnaires because they feel that the differential nature of their political views cannot be adequately captured by the questions with fixed-choice options (Donsbach & Traugott, 2008). Politicians are busy people with time constraints and can also have distrust in the purpose of the research or the trustworthiness of the researcher. In this case, the researcher was from a relatively new university in a different country to the participants, which may have impacted on the response rate. It was also difficult to obtain direct contact details for the majority of participants, and the researcher had to contact their office in hope of establishing direct contact with potential participants. It is possible then that the questionnaire did not reach some potential participants. As noted

in the previous chapters, there are also many factors that politicians need to take into account when engaging in a public debate or taking a stance on a particular issue, and as such may have been reluctant to participate in research on medical cannabis.

In hindsight, it may have been better to attempt to make direct contact with this group of participants and establish rapport before interviewing them. Face-to-face interviewing would have been preferred, as the participants may have been weary of online surveys and may have held concerns about the security and data integrity (Rivera, Kozyreva, & Sarovskii, 2002; Sax, Gilmartin, & Bryant, 2003). However, face-to-face interviewing was not possible for the purposes of this study due to money and time constraints, and the location of the researcher.

Discussion

There were some underlying differences between the respondents in terms of the demographic information. Just under half (48%) of Group one and 83 percent of Group Two respondents identified as Democrat, which supports the earlier assertion that Democrats generally tend to be in favour of medical cannabis, and the majority of participants in both groups indicated that they supported medical cannabis. While Group One participants were identified as participating in the medical cannabis process, the findings indicate that a majority of Group Two participants were also aware of the medical cannabis debate in their state. It indicates that even those that are not directly involved in the process have some knowledge of it, and have formed opinions on the issue.

As the medical cannabis movement keeps gaining momentum, it is possible that a large percentage of the population will in some way be exposed to the medical

cannabis debate or have personal experience with it. This makes it important for evidence to be disseminated to the wider population, so that informed decisions can be formed. However, as discussed in Chapter One, there are a number of factors that play a role in the medical cannabis policy process, and evidence does not play as big a role as one might assume. While it is acknowledged that the findings of Group One and Two studies may be biased towards the views of medical cannabis supporters, some underlying themes have been identified. While the findings in this chapter were presented as themes, it should be noted that they are not independent of each other and actually interact as part of the policy process.

The general consensus between research participants was that cannabis can be used effectively as a medicine, but there were no elaborate discussions in relation to specific disorders. An overwhelming majority of participants also agreed that further research on cannabis as a medicine was needed, particularly research addressing different routes of administration, appropriate dosage, side effects, and long-term effects. While those involved in the research field, such as Group Two participants, were more likely to call for more evidence on cannabis' medicinal properties, it was also noted that the results may not have enough impact unless they are reaching and informing those involved in the policy making process. Group Two participants were also less optimistic in terms of the role scientific evidence plays in passing medical cannabis legislation, but this could be attributed to their belief that more evidence is needed. However, it is important that the evidence being disseminated to the public and those involved in the process remains objective, and that it be presented in a way that is easy to understand.

What also needs to be taken into consideration is the individual or the group, such as politicians, who the evidence is distributed to and what sort of evidence they require (Ritter, 2009). For example, Ritter (2009) found that politicians were interested in simple, uncomplicated information. In relation to understanding who the evidence is provided to, Davoudi (2006) stated that:

When it comes to influencing policy, it should be noted that new evidence does not enter a pristine environment, it has to fit into the policy-makers' general understanding of how the world works. Such understanding comes from a variety of sources ranging from scientific, systematic research evidence to anecdotal experiences and tacit and uncoded knowledge. (p. 21).

While the notion that scientific evidence should play a major role in influencing medical cannabis policy is ideal, it is also not realistic in the sense that there are other factors which play a role in the process and which need to be taken into consideration. The role of scientific evidence in informing policy also depends on a variety of factors, such as the government; context; how it is used and for what purpose; how it is presented and communicated; the direct policy process; and what individuals interested in the policy make of the science. While it might be argued that policy should be enacted on the basis of the scientific evidence, it needs to be understood that the legislative process is essentially political. Advocates of medical cannabis, or other drug law reform, while not losing sight of the evidence, also need to understand and engage in the political process. A change in researchers' attitudes is also required, so that the sole focus is not just on generating research, but on making that research an influential part of the policy process.

The findings also indicate that there may be some differences between the factors which play a role in passing medical cannabis laws in states with the initiative process and those without. The results of this study indicate that a distinction needs to be made between the factors playing a role in medical cannabis policy formation in states with an initiative process and those without. While the participants thought that it may be easier to pass medical cannabis laws in states with an initiative process, there were also difficulties associated with it, such as cost and potential for the system to be abused by those who have monetary and organisational power. The question of who set the agenda and for what purpose is also another important question to consider with regards to the initiative process, as, according to Kousser and McCubbins (2005) “it does not allow for careful selection of those who set the agenda” (p. 20). Kousser and McCubbins suggested that, due to the flaws in the process, initiatives have the potential to lead to negative outcomes and poor implementation. This can be related back to the poor implementation of medical cannabis laws in some states and the difficulties experienced with implementing such laws which will be discussed later. Overall, while using the initiative process has helped in the passing of medical cannabis laws where they may not have passed otherwise, the ballot initiative process can also be abused. For example, money from outside organizations can often have a disproportionate influence on the process, which may or may not be consistent with what the evidence supports or what the majority of the electorate desire.

The findings also indicate that influencing public opinion is a driver in instigating policy change, especially when concerning a polarising topic such as medical cannabis. Public support was rated as one of the top three factors of influence by both Group One and Group Two participants. According to the findings, laws are not likely

to work without the support of the public. As a result, influencing public opinion is one of the major focus points for those who are attempting to get a law passed.

While the state by state review in Chapter Four showed that there were high-profile organisations supporting medical cannabis, Group One and Two participants did not think that high-profile individuals played a significant role in the medical cannabis policy process. They ranked it as eight and seventh respectively, and indicated that other factors, such as legislative and public support, took precedence. Notably, Group One participants rated advocacy groups as the second most important factor influencing policy, while Group Two participants rated this as the second last. The difference could be attributed to the fact that Group One participants had a direct involvement in the process and possibly had had interactions with advocacy groups. Because Group One participants were selected based on their involvement in the medical cannabis debate in one of the five states under review, they may also have been medical cannabis advocates and may have seen their involvement in the process as important. Because Group Two participants were not involved in the medical cannabis debate, they may have taken a more objective view of the importance of advocacy groups and other factors.

Both Group One and Group Two participants placed the support in the legislature as one of the most important factors influencing policy. This is also linked to the influence of high profile individuals, as some politicians are very high profile and were known to actively support or oppose medical cannabis policy. While it is important to have support from the politicians, especially those well-known or well-liked by the public, the support does not come easily as there are many factors politicians need to take into account when making policy-related decisions. If the aim is

to make policy making more evidence-based and educate politicians, then scientists should be aware of the political process and the factors, apart from scientific evidence, that politicians need to take into account.

Patient testimonies were ranked by Group One participants as sixth out of nine factors influencing medical cannabis policy creation and last by Group Two participants. This could possibly be due to the fact that the evidence so far has been limited and inconclusive. Those participants who were researchers may also have been biased towards the role of scientific evidence. Nonetheless, as can be seen from a look at the process of how medical cannabis laws were created, as discussed in Chapter Four the role of anecdotal evidence should not be underestimated.

Notably, Group Two participants rated money as the number one factor influencing medical cannabis policy. It was placed fourth by Group One participants, who were directly involved in the process. This tendency could be explained by the fact that only four (13%) Group One respondents participated in the medical cannabis debate in Michigan, while most resided in New Mexico, Illinois and Louisiana, which have no ballot initiative process or cannot put medical cannabis on the ballot. The results also indicated that the reason why some organisations or individuals supported medical cannabis policies was not due to science or compassion, but due to the belief that medical cannabis is a business and there are profits available. The influence of funding sources can then make it difficult for decision makers to remain objective.

Taking into account the many factors participants identified as playing a role in the medical cannabis process, it can be said that the political process is composed of a

number of different factors and influences. These include political timing, legislative pressure, and party ideology.

Unrelated political conflicts and instances when other pieces of legislation are used for a different purpose can also impact progress, as well as political “mind games” such as threatening funding and adapting to a particular environment in order to send a particular message. There are also different factors that policymakers need to take into account, which can diminish the perceived importance and influence of the scientific evidence. Overall, policy creation can be a long and difficult process, where persistence and a well-organised effort are of importance, as well as the interplay of different factors such as timing, political ideologies, and the context in which the policy creation is occurring.

“One of the major issues that ultimately led to it being a 7 year fight were all the unrelated political conflicts and instances when other pieces of legislation were used to impact our progress, or when our bill was used to further another bill. Hostage situations (taking the bill hostage in exchange for another bill), timing issues, all unrelated to the merits of the bill but part of the political process” (G1-6, New Mexico).

Study Limitations

As with any research, there were some unavoidable limitations with this study. One noteworthy limitation was low response rates in the research groups. Although the findings of the study were intended to inform the researcher and there were no expectations in terms of acceptable response rates for the groups, previous research has found that an average response rate for online surveys to be around 33 percent and 56

percent for paper-based surveys. While the use of online surveys is increasing, little research is identified which can suggest what an appropriate expected response rate may be. According to Nulty (2008) “whether or not a response rate is adequate depends (in part) on the use that is being made of the data” (p. 307). Participants for this study were asked to provide their views on factors influencing the medical cannabis process, and it was therefore decided that, although limited in the number of respondents, Group One and Two participants were able to offer a valuable insight into the policy process from the view of those directly involved in it and those involved in the science based aspect of policy. The low response rate could be attributed to a number of reasons including an increase in the number of research studies during the past few decades and the number of requests participants may receive to participate in studies, overall decline in social participation, and participation not being viewed as worthwhile (Galea & Tracy, 2007). Research has shown that face-to-face interviews result in higher response rates, but this was difficult to achieve for the purpose of this thesis due to the researcher’s location and time and money constraints (Nulty, 2008). Future research may consider face-to-face interviews and increasing the sample size to try and achieve a higher response rate.

There is also the issue of generalizability of the findings. In terms of Group One, individuals involved in the medical cannabis debate in the five U.S. states reviewed here are a unique sample, and the data obtained may not be applicable to other populations. Group Two participants were all researchers and had varying degrees of familiarity with the medical cannabis debate in the five U.S. states, and could be considered to have a more objective view of the topic due to lack of direct involvement. It is not possible to demonstrate that the sample was representative of the population; therefore caution must be exercised in generalising conclusions beyond the medical cannabis policy field.

However, it is important to note that this study was of an exploratory design and generalisability was not the aim of the study. The aim of this study was not to test a hypothesis, but obtaining an insight into the medical cannabis process and what happened in the five states under review from the perspective of those participating in the process and those observing it. This sample is therefore a very small proportion of everyone involved in the medical cannabis process in the U.S., either directly or indirectly, and research studies with a much larger sample size would be needed to ensure generalisability of the findings. The data collection was limited to only five representative U.S. states and future studies may want to look at replications of the study in different U.S. states and in the general population.

There might be a potential for bias in the Group One sample of participants as they already had formed views on the medical cannabis issue, which were expressed in the public forum and identified in the literature review for each state. Nine (31%) of Group One participants also used cannabis for medical purposes, and eight (28%) used it recreationally. In contrast, no Group Two participant used cannabis for medical purposes, but 11 (48%) used it recreationally. However, the majority of participants in both groups supported medical cannabis legislation, and the sample may therefore be biased toward medical cannabis. According to Galea & Tracy (2007), potential participants are more likely to respond to surveys they are interested in and that have some personal value to them, which may explain more medical cannabis supporters completing the surveys. The sample was also biased in terms of political affiliation, with 48 percent of Group One participants and 83 percent of Group Two participants identifying themselves as Democrats. As discussed in the state by state review in Chapter Four, Democrats generally tend to be supporters of medical cannabis while

Republicans tend to oppose it. As such, the views of those involved in the study may greatly differ from the views expressed by those not involved, as the supports of medical cannabis legislation may have been more inclined to participate.

Another potential limitation of this study is that it relied on self-reported responses, which can lead to potential bias in results (Donsbach & Traugott, 2008). Biases can be derived from participants' experience of medical cannabis or recreational cannabis use, as well as their involvement in the debate; they may misreport their level of involvement or the importance of certain factors based on their personal opinion and experience, and may be inclined to provide socially accepted responses. Personal perceptions and opinions of the participants in this study may therefore not reflect the actual medical cannabis policy process and the importance of factors influencing such a process. However, self-report methods were considered as the most appropriate and realistic method for gathering the required information, due to the participants' location, and for gathering information about the process itself from the perspective of those involved in it. It is therefore advisable that any future studies draw a random sample of the population.

Chapter 6- Group Four Study

This chapter will outline in detail how the Group Four study was undertaken, provide details of the study design, and present Group Four findings. The purpose of this study was to further explore the themes developed through earlier studies and the state by state review, and obtain a general overview of the factors influencing alcohol, other drug, and medical cannabis policy from the perspective of individuals involved in the field.

Sample

Group Four participants were members of the ISSDP, and were chosen as individuals who had an interest in, and participated in, the drug policy field. It was anticipated that the participants would have sufficient experience to answer questions relating to the drug policy field and the processes and factors involved in enacting policy, without necessarily being directly involved in the medical cannabis debate. Their opinions were sought as experts on the drug policy process and it was anticipated that they would be able to provide an objective, informed view of the process. All participants were identified through the ISSDP 2010 conference registration list supplied to the researcher by ISSDP. All participants who were not personally involved with this study through providing feedback on the study to the researcher, and whose email addresses were available were invited to participate in a semi-structured telephone interview.

A total of 90 potential participants were invited to participate in the study. Nineteen individuals responded to say that they were unable to participate in the study for several reasons, including insufficient knowledge of medical cannabis policy,

insufficient knowledge of the drug policy field, and time constraints. The interviews were conducted with participants in the order that participants were available for interview. It was estimated that ten interviews would be able to provide a valuable insight into expert view of the policy process, and data saturation was reached after ten interviews. In qualitative studies, saturation is reached when no new or relevant information emerges from the data, and the information obtained from participants becomes repetitive (Given, 2008; Liamputtong & Ezzy, 2005; Mason, 2010; O'Leary, 2004).

In total, interviews were conducted over three months, with ten participants of whom five resided in the U.S., three in Australia, one in the Czech Republic, and one in France. Their occupations included professor, senior economist, consultant in social research and evaluation, researcher, PhD student, lecturer, and assistant policy advisor. All participants had research experience in drug policy, and five had studied policies on the use of cannabis as a medicine.

Procedure

Approval for the study was obtained from the ECU Human Research Ethics Committee prior to commencing the research. The following section will describe the procedures used in the development of the semi-structured interview schedule and how the interviews were conducted. The data collection period spanned from 16th February 2011 to 22nd April 2011.

According to Corbetta (2003), qualitative interviewing allows the researcher to gain an understanding of a subject's perspective, "understanding his mental categories, his interpretations, his perceptions and feelings, and the motives underlying his actions"

(p. 264). It was expected that Group Four participants would be able to present an objective overview of the policy field and factors which play a role in influencing it, along with their experiences of working in that particular field. Qualitative interviewing also does not call for a representative sample, making it appropriate for Group Four participants who were all from similar fields and were members of ISSDP (Corbetta, 2003).

Telephone interviews, specifically, allowed the researcher to obtain more in-depth data than questionnaires did, and allowed respondents to discuss their experiences, perceptions, and attitudes (Morrison et al., 2000; Stetson & Romeo, 1996). Telephone interviewing is a cost-effective way to cover a greater geographical area, which allowed the researcher to interview participants from four different countries and obtain a wider perspective of the policy process (Musselwhite, Cuff, McGregor, & King, 2007). It also allowed the researcher to arrange interview times across different time zones, at a time convenient to participants, and allowed for a dynamic interchange of information and allowed the researcher to clarify responses and discuss relevant issues (O'Leary, 2004). Protection of participants' anonymity was also considered when selecting an appropriate interviewing method, and telephone interviewing allowed this. According to Musselwhite et al. (2007) "the anonymity associated with telephone contact may enable participants to be more forthcoming with their responses" (p. 1066). Due to low participant response rates for Groups One to Three, telephone interviews were utilised for Group Four interviews as they generally have better response rates than questionnaires (Glogowska, Young, & Lockyer, 2011).

Interview questions. A semi-structured interview schedule (Appendix E) containing nine open-ended questions was used. Semi-structured interviews are the

most used interviewing format for qualitative research (DiCicco-Bloom & Crabtree, 2006). According to O’Leary (2004), semi-structured interviewing “gives both the interviewer and the respondent ample freedom, while at the same time ensuring that all the relevant themes are dealt with and all the necessary information collected” (p. 270). The questions helped guide the interaction between the participants and the researcher, while still allowing participants an opportunity to raise and discuss pertinent issues (Liamputtong & Ezzy, 2005). Examples of questions included “What role do you think scientific evidence generally plays in policy-making?” and “In your opinion, which factors influenced the passing of medical cannabis legislation in 15¹¹ U.S. states (such as California, Michigan, and New Mexico) since 1998?”

The questions were based on themes derived from the state by state review and Phase I results. The questions sought to investigate the role of scientific evidence in medical cannabis policy, and identify the factors influencing general drug as well as medical cannabis policy. In semi-structured interviewing, the wording and order of the questions can be changed, depending on the interview and the participant (O’Leary, 2004). Some questions were omitted due to participants’ lack of knowledge or inability to answer a question, while in certain cases questions were added in order to facilitate discussion. Probing (or prompting) was also used to encourage participants to provide more information or to clarify an issue (O’Leary, 2004).

The interview process. Once the contact details of ISSDP members were obtained, they were emailed an information letter which outlined the nature of the study and invited them to voluntarily participate in it. The letter also informed participants

¹¹ At the time of the interviews being conducted, 15 U.S. states had enacted medical cannabis legislation.

that the study looked at the policy process underlying medical cannabis laws in the U.S., how problems and issues are recognised and raised, and how and why governments choose to act or not act on certain policies. The participants were advised that they had been identified as someone who could comment on the policy process due to their involvement with the ISSDP.

Participants were asked to indicate their willingness to participate in the study by sending an email to the researcher stating their agreement. They were then contacted by the researcher to arrange a suitable interview time. Participants were informed that they were free to withdraw their consent and cease their involvement in the research project at any time. Participants were provided with contact details of the researcher, two supervisors, and an independent contact (ECU Research Ethics Officer) in case they had any questions about the study. Prior to the interview taking place, participants were sent a confirmation email, allowing them time to raise questions or concerns regarding the study. If a date change was necessary, participants were asked to indicate their availability and the interview was rescheduled to a more suitable time.

All Group Four interviews were conducted at a time convenient to the participants and the researcher. The researcher obtained a quiet room with a speaker telephone, and interviews were recorded and transcribed verbatim. All interviews were completed in one sitting. Before interview questions were asked, the researcher explained the purpose of the interview, addressed the terms of confidentiality, explained the format of the interview, indicated how long the interview would take, and allowed participants to ask questions to clarify any concerns they had (Musselwhite, et al., 2007). The researcher also attempted to set participants at ease by reviewing the aims of the interview and reassuring participants of their anonymity. Participants were also

reminded that the interview would be voice recorded for later transcription, and their consent was confirmed.

The interview was voice recorded in order to preserve the data in its purest form, as it would have been difficult to write notes and keep track of the questions while maintaining a conversation with the interviewee (Glogowska, et al., 2011). The interviewer used a speaker telephone in a quiet room at ECU, and an audio-recording device with high sensitivity. One participant preferred using Skype (www.skype.com) for the interview and this was arranged. The Skype interview was recorded using audio-recording software on the researcher's computer.

The interview began with generic questions in order to establish rapport with the participants and set them at ease (Musselwhite, et al., 2007). The interviews were kept at 30 to 40 minutes long, in order to minimise participant inconvenience (Glogowska, et al., 2011). One interview had missing data due to technical difficulties with the voice recorder. The participant invited the researcher to email them the missing questions, but no response was received. After the interview took place, the researcher allowed respondents time to add further information or discuss any pertinent issues.

After the interviews were completed they were transcribed by the researcher, and audio files of telephone interviews were stored in a password protected computer in the researcher's office at ECU and all further work was done using the transcripts. Only the researcher had access to the transcripts. All transcripts were numerically coded; each participant was assigned a different numerical code, and no identifying information was used. All transcripts were coded based on the participant's group, and their interview number. For example, if the participant belonged to Group Four and was the fifth

participant interviewed, they were assigned the code “G4-5”. Transcripts and data were stored in a locked filing cabinet at ECU.

Analysis

After the accuracy of the transcripts was verified, by checking them against the audiotapes, they were analysed using thematic analysis, with a focus on maintaining the essence of the participants’ accounts (Liamputtong & Ezzy, 2005). Thematic analysis involves the identification of themes through reading and rereading of the data and coding of recurring themes appearing throughout (Liamputtong & Ezzy, 2005). For more information on thematic analysis and the steps used in the analysis process, please refer to Chapter Five, “Analysis” section.

An audit trail consisting of how codes and themes are developed was kept in order to enhance the credibility of the research. Providing an audit trail ensured the rigour of the study, clearly and accurately documenting how the data were collected and analysed and how interpretations were made. In order to check the validity, the supervisors of the project reviewed the themes (Liamputtong & Ezzy, 2005). The researcher used a reflective journal (memoing) in order to recognise any research bias, which added to the authenticity of the information (Liamputtong & Ezzy, 2005). QSR International’s computer-assisted qualitative data analysis software, Nvivo 9, was also used to assist with the organisation and analysis of the data, and with keeping an audit trail (QSR International Pty Ltd, 2010).

The following section outlines the findings from Group Four interviews, presented according to emerging themes.

Results

Moderate but increasing role of scientific evidence. One of the major themes arising from the Group Four study was the influence of scientific evidence on general drug policy. The general consensus amongst participants was that the scientific evidence did and continued to play a role in the policy making process and the policy debate. However, as noted in the previous chapters, that role was generally believed to be limited and not to the level that researchers may have wanted. Those conducting research also hoped that evidence did play a role as that meant that they were serving their purpose and contributing to the process.

“You know, if you had a rating scale of 0 to 10 of how much role does science play in it...I would put it currently at about a 4 or a 5 in general alcohol and drug policy. We have seen, for example, increasing use of medications in treatment over the last decade- in part because of science and research, but it’s...I would put it maybe at a 4 ½ to 5...So I would say a moderate amount that is done in alcohol and drug treatment in general” (G4-4, U.S.).

“I mean, my life sort of depends on it having an effect; because if it doesn’t, I’m just wasting my life. But it is kind of frustrating that....It seems like you have an effect maybe, but it’s a small effect; and it could really go either way” (G4-5, U.S.).

“I think it plays a minor role to a moderate role. It can definitely motivate a change in policy, support a case for it, but in terms of implementing the best policy it’s not always then used” (G4-10, U.S.).

Participants also indicated that the impact of scientific evidence on policy had increased over the years and attributed this to an increase in research and an improved communication between researchers and policymakers.

“I do think it’s playing an increasing role. I do think in some areas of medicine and health care it plays a substantial role” (G4-4, U.S.).

Scientific evidence: a range of roles. In regards to general policy making, roles of scientific evidence were varied and depended on a number of factors. Scientific evidence was found to motivate a change in policy and help shape policy; help get an issue onto an agenda and lead to a recognition of an issue; be a part of the policy discussion; influence and educate state legislators; and inform the process and the actors in it. The question that arises, however, is whether scientific evidence is used to implement the best policy, as this has not always been the case. As discussed in the earlier chapters, while scientific evidence may not have a direct impact on policy creation, it does enter the discussion and can help inform the policymakers. This supports Weiss’ “enlightenment model” that the impact of research on policy is not direct, but research is instead seen as one of several sources of information available to policymakers (Weiss, 1977, 1979).

“It can definitely motivate a change in policy, support a case for it, but in terms of implementing the best policy it’s not always then used....I think what scientific research does more than anything is it helps modify existing policies” (G4-10, U.S.).

“I think state legislators change their position based on the scientific evidence....I think scientific evidence is a part of the discussion. I’ve seen

legislatures go from incarceration to diversion treatment. I've seen legislatures go to needle exchange programs as a way of fighting the transmission of HIV. So, I have seen scientific evidence impact policy decision at the local and state levels" (G4-1, U.S.).

Scientific evidence and agenda setting. According to Kingdon (1995) decision makers will prioritise those problems where someone like the administration or the scientific community can provide them with a constructive solution. However, three of Group Four participants argued that even with scientific evidence available, this did not play a significant role in agenda setting. The question that this view raises is, even if the evidence is brought to the attention of policymakers, will it make any difference to agenda setting?

"I think — generally speaking- scientific evidence is very low in the hierarchy of influences on setting agenda. A low- fairly low- in hierarchy of influences that lead to governments paying attention to an issue" (G4-2, Australia).

"I don't think it influences agenda setting. So if you think about how governments do business, the first thing is: it needs to be on their agenda. The second thing is: they need to look for solutions. And then the third thing is: they need to implement those solutions. So in terms of agenda setting- research has a very small role to play in agenda setting; that's much more the area of public opinion, and media, and individual political concerns" (G4-8, Australia).

Factors influencing the role of scientific evidence. As discussed in Chapter One, Weiss listed the reasons for the limited use of research in policymaking as weaknesses in the research itself, conflicting demands on policy, and the discrepancy between what knowledge is needed by policymakers and what is provided by researchers (Weiss, 1977, 1979). Black (2001) listed these reasons as policymakers having their own goals for policies other than scientific evidence and clinical effectiveness, the dismissal of scientific evidence as irrelevant and not applicable, lack of consensus about scientific evidence and its interpretations, focus on other types of evidence such as personal experience, social environment not conducive to policy change, and poor quality of knowledge purveyors. Group Four participants also believed that there were a range of factors that influenced the use of science in policy formation, and whether or not it is used to influence policy. How the evidence is communicated to the public and other actors in the policy process was the most discussed factor of influence. Five participants indicated that the way the evidence is communicated can impact on whether or not it is used to influence a particular policy.

Other factors included access to evidence and the type of research accessed; the availability of scientific evidence; who has access to the evidence and in what context; connections within the political field (how scientists are connected with the political field, who is responsible to whom, etc.); context and the time period; mass media and how it presents the scientific evidence; public perceptions of what evidence is; interest in scientific evidence; type of society the policy is made in; and the topic area. Overall, the participants did not believe that a single factor influences the impact of evidence on policymaking, but rather a number of different factors. However, all participants agreed that what is lacking is getting the right type of research to the wider public, who

generally tend to obtain their information from non-scientific sources, rather than scientific journals.

“...There is a whole journal now here in the States about the therapeutic benefits of cannabis and the various studies that show the clinical studies of cannabis. And you can find lots of scientific articles in that journal. But I think that most doctors would say that that journal is probably not as well read or accepted as JMR or the New England Journal of Medicine, and you don’t see articles there; but does the average person know that? The quality of science is not dichotomous either and the average person isn’t necessarily able to decipher that” (G4-10, U.S.).

“You know, we’ve been busy funding science in the U.S. for the last 50 years and we fund a ton of wonderful science, but there’s been almost very little attention given to how to communicate that science to the public....In fact, for those of us who get grants and research: we get the grant to do the research; we do the research; we do the research findings; if we’re lucky we get something that we can publish in a professional journal; and then we’re onto the next grant. There’s never any attention paid to get this information out to the public and try to communicate it to the broader community. And I think that’s then part of the problem in getting the public more aware of the science of alcohol and other drug policy” (G4-4, U.S.).

Improving the use of scientific evidence in policy making. Bacci (2009)

suggested that in order for research evidence to be used effectively in the policy

process, researchers and policymakers need to take a more collaborative approach instead of working in isolation. Bacci also suggested that policymakers need to be involved in all stages of research from the development of the research question to the implementation of the results. Group Four participants thought that the first step in improving the use of evidence is improving how the evidence is communicated to the individuals involved in policy making (such as the public and the politicians). The participants believed that scientific evidence needed to be reconciled so that it encompassed both sides of the debate and presented results in an objective way. They indicated that it was also important to make evidence easier to understand, and focus on translating it into the political field. This could be done, as Bacci (2009) suggested, by taking a more collaborative approach between researchers and policymakers.

“If science is supposed to be objective and get information and present facts, we can’t force people to use those facts, unless we can educate them. So I really, really believe that if science was to become more important in affecting policy it needs to do a better job of communicating not just to the politicians but also to the layperson what the essential points are – and not doing it by overstating the findings, because that’s where we get ourselves into a lot of trouble with drug policy is things tend to get overstated...and be honest when the results aren’t clear” (G4-10, U.S.).

“It’s how that evidence is manipulated, is packaged, is communicated to the people who can make use of it. In my view, we need to return to some kind of arrangement whereby there are structures, and resources, and known channels through which the research evidence can be- not just put

together- but packaged, and communicated, and used in the policy context at the national level” (G4-2, Australia).

“...I think in the future for us to get science to play a better role our ability to communicate effectively, and to communicate in a way that the public understands it, and to tailor the messaging so it’s something they can relate to their own lives- THAT makes a difference” (G4-4, U.S.).

Other ways of improving the role of scientific evidence, as mentioned by the respondents, included more studies, apart from ideology; drawing more attention to science, “selling it”; making science more accessible; catering to policymakers’ interests; mixing science with politics by scientists becoming more aware of political issues and the political process; and providing objective information.

“I think scientists and the organisations that promote science and that think that science should have more influence need to do a better job and invest more in communicating the science more effectively, and getting the science out to the public in vehicles. And if you’re going to try to communicate via mass media you have to be skilled at communicating in a way people can understand and that they will continue to pay attention. And I think that we haven’t done a lot of that. I think we’re moving in that direction and I think that’s going to be one of the factors that will determine how successful we are in making science more important in setting policies and developing the whole policy side of things” (G4-4, U.S.).

“I think the first thing is to do the kind of research that matters to policy makers. Most research that’s conducted in drug and alcohol is marginal to policy makers’ interests. So that’s problem number 1 – we’re studying the wrong things, because we’re not studying the things that policy makers are interested in or need to make decisions about... Now, we do efficacy trials all the time and we rarely do effectiveness trials. And politicians aren’t interested in efficacy so much; they’re much more interested in effectiveness. That is, if they rolled out this treatment, would it actually be used in a way in which it’s intended and produce the outcomes that the polities were looking for?” (G4-8, Australia).

Science and democracy. As mentioned in Chapter Two, one of the more prominent criticisms of the initiative process is that voters lack education and competence to make policy decisions (Burnett & Parry, 2014; Matsusaka, 2005). Research has shown that most voters are uninformed about public policy, politics and government, which raises the concern that damaging policies may be adopted as a result of voters lacking education. The question this raises is whether, in a democratic process, science should play a more important role than public opinion, or vice versa? And how restricting is the democratic process to evidence-based policy?

“...I think that there’s an optimisation here that hasn’t been done, and that is: If science is providing information that’s counter to what the general public wants to believe; and in democracy, should science be the one thing directing policy? I would like to believe science is very important and is more important than people that don’t understand the facts – that’s not democracy” (G4-10, U.S.).

Scientific evidence in the future: an increasing importance. Overall, Group

Four participants were optimistic that if steps were taken to improve its use, the role of scientific evidence in the general policy making process will likely increase over time:

“You know, I couldn’t keep doing the work I do if I didn’t think it was going to increase” (G4-4, U.S.).

“I tend to think that in the future it will get better. That overtime- as people become more educated- they’ll have better scientific understanding of the theme and a better appreciation for scientific evidence, and a global willingness to defer to science when they need to” (G4-5, U.S.).

Selective use of scientific evidence. The use and misuse of scientific evidence by the people involved in the policy field was another theme frequently discussed by Group Four participants. Participants addressed the issue of “cherry-picking” or the act of selectively using data that conform to a particular position in order to promote it, while ignoring cases or data that may contradict that position. Participants believed that science was used by the individuals involved in the policy making process to “sell” their position to the general public and gain support for the issue they were representing. This was also a major theme in the state by state review in this thesis, as well as Group One and Two studies. This was also described by Weiss (1991) as “research as arguments”, representing research to which an advocacy position has been added. The difficulty lies in overcoming the selective use of evidence, and Birkland (2005) and Ritter (2011) argued that to do this it would be important to bridge the gap between what research tells us and how citizens and government officials use that information.

“I think that people prefer science that supports their position so it gets selectively reviewed and presented on every side of the issue” (G4-10, U.S.).

“Politicians, I believe, use the scientific evidence in the substance abuse field primarily in the way that we do characterise as “cherry picking”. In other words, selecting those bits of evidence that are consistent with a predetermined position. And, unfortunately, many public servants now find themselves taking the same approach” (G4-2, Australia).

“What’s very interesting is that sometimes the same scientific evidence or the same scientific theory is used in two different ways by two stakeholders, like lobbyists and politicians, that are actually opposed in the drug policy creation” (G4-9, France).

Scientific evidence and medical cannabis. While not all participants were familiar with medical cannabis research and medical cannabis policy in some of the U.S. states, the majority agreed that there was insufficient scientific evidence supporting cannabis’ use as a medicine to warrant policy change. The respondents indicated that the evidence was usually mixed and could generally be considered limited. Similarly, the research evidence reviewed in Chapter Three has shown that cannabis and its constituents have therapeutic potential for a number of conditions, some for which the evidence is mixed and unclear. Most of the research evidence supports the use of cannabis in the treatment of chronic pain, spasticity, nausea and vomiting, and as an appetite stimulant for AIDS-related wasting syndrome. The participants concluded that it

is difficult to make effective policy on medical cannabis when research is mixed or lacking.

“In the case of medical marijuana I think that there are certain areas where there’s lots of research; and there are certain areas where there is still a gaping hole. And so the science is not as developed as in other areas” (G4-10, U.S.).

“So the scientific research on dosage, on impact, for what conditions, really is not out there” (G4-1, U.S.).

“The science of cannabis and its effects as a medicine have been so poorly studied up to this point. It’s hard to make policy on cannabis as a medicine based on science because there’s so little science” (G4-4, U.S.).

As a result, the participants believed that in the case of medical cannabis, scientific evidence has not been a main motivating factor for policy change.

“But the rest of the scientific evidence just doesn’t stack up in terms of the benefits of medicinal cannabis. So, given that states in America have approved medicinal cannabis; I don’t think it’s on the basis of scientific evidence, because if it was on the basis of that, they wouldn’t have approved it” (G4-8, Australia).

“There was no such crisis in those 15 states, besides, I guess, the gradual change in opinion in voters’ minds, where it eventually got to the point where you had these laws from so long ago that they didn’t

really match up with people's opinions and their sense of compassion towards sick people" (G4-5, U.S.).

While it was generally not considered to be the sole factor driving medical cannabis policy, the participants suggested that scientific evidence did play a role in the policy process by informing the process, rather than directly affecting it.

"It remains a very complicated process which the science informs, but doesn't really decide political polemics about legalising recreational drug... intertwined with medicine and science....So, the science is a part of it, but science I don't think overwhelms it- I gave it less than half of the contribution" (G4-1, U.S.).

"I think that in this case the research hasn't been the motivating factor for the policy change. No. I think it's been used in the discussion, but it has not been the motivating factor for policy change" (G4-10, U.S.).

One participant also discussed the need to educate people and gain knowledge as something that should be the motivating factor for gathering evidence on medical cannabis.

"I don't think it's been done to warrant a policy change; I think that we generally need to know. In the U.S. there was a senate committee that was funded to look at the medicinal value of marijuana using clinical trials, and I think that that was completely appropriate and should have been then" (G4-10, U.S.).

Factors influencing the use of science in medical cannabis policy. Similarly to general policy formation, the participants believed that there were certain factors which

influenced medical cannabis research, whether or not science was used in the medical cannabis policy process, and how the evidence was used. No one particular factor was identified, but rather a range of factors which were believed to influence the quality of scientific research and its role. Politics and the political nature of medical cannabis policy was the most frequently mentioned factor. Participants suggested that politics had the potential to interfere with the role science had in informing policy and could prevent medical cannabis research from occurring. Other factors mentioned by participants included limited research funding, the priority given to research (participants believed medical cannabis research was not seen as a priority by governments), restrictions placed on medical cannabis research due to the drug's scheduling and difficulty in obtaining cannabis supplies for research purposes, communication between different actors in the policy process, religious groups, special interest groups, and the type of research conducted.

“I’d say it’s all political. I don’t think enough research has been done, but, that’s a political issue because of the scheduling issue in the U.S. ...Unfortunately, because cannabis is classed as a Schedule I drug in the U.S., not a whole lot of research has been done. I think the way government sees it now is that it’s a non-issue because marijuana-cannabis- is still classified as a Schedule I drug and so they’re not funding research; people have a hard time getting any funding for research legally and doing it ethically” (G4-6, Australia).

“First, on a political level, it’s easier to make the argument that marijuana should remain illegal if there’s nothing good known about it... With regards to the second one: the importance of the special interest

groups. I do think that it will also kind of hinder the use of scientific evidence, unless that scientific evidence can be framed in such a way as being beneficial to those special interest groups; to the police, the prison guards. In that sense, if it could be framed as their asset, then they could gain some significant allies. But generally, I think those groups are going to be against a lot of scientific evidence and also the use of scientific evidence” (G4-7, U.S.).

“...there’s not a whole lot of priority in really funding research on medical cannabis and what it can do. There is some, but it’s not going to get a lot of federal funds, it’s not going to get a lot of state funds. These are tough budget times; it’s not going to get a top priority.... And the politics can really interfere with the science” (G4-1, U.S.).

“... in the United States, as an addiction researcher for 35 years, we have not been able to research cannabis. It’s been impossible to get supplies of it; the National Institute on Drug Abuse wouldn’t fund it... until the last, I don’t know, 5 to 8 years, it simply was a topic you couldn’t do research on and so we kind of ignored it” (G4-4, U.S.).

Improving the use of scientific evidence in medical cannabis policy. After it was suggested that scientific evidence does not play a significant enough role in relation to medical cannabis policies, participants suggested a total of six different ways of improving medical cannabis research and giving it a more important role in medical cannabis policy making. Conducting more definitive medical cannabis studies was the most popular suggestion, discussed by six participants. This was closely followed by the

need to improve upon how science is communicated to the general public and the individuals involved in the policy process. Participants also mentioned the need to conduct more studies, and conduct them away from ideology. Re-scheduling of cannabis was also discussed, as one participant believed it would allow access to the drug in order to conduct more studies and obtain more funding. Lastly, two participants suggested that researchers needed to conduct research that is relevant to politicians and policymakers:

“I think it would be very helpful to do some definitive scientific studies that would look into medical marijuana, and in terms of the health condition, in terms of what it is. You know, we think “Marijuana. What is it, marijuana?” THC, I mean, the dosage levels, delivery...Is smoking the best way to get the medicine to you?” (G4-1, U.S.).

“I think with cannabis as medicine there are a few steps before that that we also need to be doing, which is documenting clearly what cannabis is useful for, and documenting with carefully designed research trials to articulate how cannabis produces whatever beneficial effects it does produce, and what proportion of the population benefit from the pain relief or which kinds of pain, why it produces pain relief. I mean, all of those....With cannabis, we have the problem of: we don’t have the science yet. And so...we need more basic, and applied, and clinical science” (G4-4, U.S.).

However, despite acknowledging that re-scheduling cannabis at the federal level is an important step towards improving medical cannabis science and its influence on medical cannabis policy, it has to be acknowledged that re-scheduling is a difficult

process. As suggested by one participant, the federal government would not reschedule cannabis until there was sufficient evidence for its medicinal properties. However, scientific evidence alone would not likely lead to cannabis' re-scheduling, as the federal government had to consider other factors, such as international treaties it is signed onto:

“In the U.S., while we have states changing laws the federal government is not going to change its law until it has more scientific evidence. And so perhaps this is just the way that evidence will come out” (G4-10, U.S.).

“I think that a lot of other things have to happen for the federal government to do it, because it wouldn't just be an issue of science given the international treaties it's signed onto. The fact that cannabis has been rated as a top ten dangerous drug internationally not just in the U.S. — that would have to be addressed for the U.S. federal government to change its policy because I don't see it as being willing to change its policy and go against the international laws, violate international treaties. That doesn't promote its other interests in seeking other people to comply with international treaties” (G4-10, U.S.).

Selective use of medical cannabis research. While participant views regarding the influence of scientific evidence in passing medical cannabis policies were mixed, it was agreed that scientific evidence can be used in different ways by different individuals in the field. Group Four participants indicated that the evidence can be used selectively by individuals involved in medical cannabis policy to further or support a position, as well as to influence public opinion. As discussed earlier in the chapter, selective use of evidence, or “cherry-picking”, is not solely limited to medical cannabis,

but is happening across the drug policy field. However, with cannabis being a contentious issue, proponents and opponents selectively using the currently available evidence was one of the major factors playing a role in the medical cannabis debate in the states reviewed in Chapter Four.

“The public definitely heard that there is some evidence for medical marijuana, and the IOM report provided some additional evidence that there might be therapeutic benefits. It wasn’t that it said that definitively, but there were a couple of statements that the advocacy groups could pull out. And the other side of that too, because the IOM said we should not make marijuana available for medicinal purposes, right now we don’t have enough science... the people who were against policy change pulled that line out. The people who wanted policy change pulled different lines out. And both presented that information to the public, and the question is: which one was the public listening to?” (G4-10, U.S).

“And on the other side of things- I think that this is a big enough issue and it’s gotten enough attention- that I don’t think that advocates on either side are basing their opinions on the scientific evidence. I think that they’re picking their facts to fit their side...” (G4-7, U.S.).

Is cannabis a medicine? Participants also brought up uncertainties over medical cannabis and whether or not it could be considered a medicine as well as the availability of other medicine that could be used instead of cannabis. Undefined aspects of medical cannabis, such as dose, purity, and distribution need to be explored further through research in order for effective laws to be created. Participants also believed that medical

cannabis policies in some states were not clearly defined, especially in terms of how the medical cannabis program should be implemented. As discussed in the earlier chapters, there are differences in state medical cannabis laws in terms of the conditions covered, the amount of cannabis allowed for medical use, and how cannabis is distributed. One of the themes that came up in this study was, if cannabis is a medicine, why is it not treated as such. This would mean following the FDA approval process for new medicine as well as having well-defined laws.

“If it’s a medicine, we aren’t really treating it like medicine....I think most of medical marijuana policies are ludicrous. Because they don’t give a good definition of disease, they don’t give good definition of dosage, there’s really no way to know the purity and delivery...It’s bizarre...through some clubs in California you ‘grow your own’ in some states... you grow 3 or 4 plants.” (G4-1, U.S.).

“Whether or not marijuana is the preferred medicine is still debated because of other issues such as route of administration and the availability of other medicines that could meet the same goal” (G4-10, U.S.).

Differences between medical cannabis and other areas of policy. It was suggested by the participants that there was a difference between medical cannabis and other drug policy, as well as medical cannabis and other medicines. The same rules did not apply to cannabis as a medicine and other medicines, such as the required FDA approval. The participants thought that there was a difference in the amount of research available for medical cannabis and other drugs, and that people were more likely to be

opinionated on the issue of medical cannabis. While some participants believed that there was not enough scientific evidence to show cannabis can be effective as a medicine, others believed that scientific evidence could play a more important role in informing medical cannabis policy than other policy areas. Alternatively, it was also suggested that science would not be as influential a factor in medical cannabis policy formation as it is in other drug policy areas. There was also a notable difference in the power the law enforcement lobby had in medical cannabis policy and other areas of medical research.

“I would say one of the differences is in a lot of the cases where we try to do a policy change, cigarettes for example, there were just volumes of research to promote or substantiate a policy change. In the case of medical marijuana I think that there are certain areas where there’s lots of research; and there are certain areas where there is still a gaping hole. And so the science is not as developed as in other areas” (G4-10, U.S.).

“So, I think- in other areas of medicine in general- there’s a greater potential for science to play a role... up to this point anyway. I mean maybe it will change with cannabis as we get good studies – if we do. And in other areas of medicine there is a more direct relationship. I mean, there’s medicine where it’s equally as hysterical. Things like, in the United States, the stem cell research and anything to do with abortion. I mean those things generate the same kind of hysteria and emotionality as cannabis. But, for the most part, in other areas of medicine there’s more direct application of science” (G4-4, U.S.).

“I don’t think you’d advocate growing penicillin. It’s a ridiculous way they approach the matters. So I think the medical marijuana policy is not a good medical policy; it’s not a good health policy” (G4-1, U.S.).

Framing the issue. Group Four participants also discussed different ways of how the medical cannabis issue was portrayed by both supporters and opponents. Generally, it was found that portraying medical cannabis as a human suffering and compassionate issue contributed to the successful passing of some medical cannabis laws. The participants also agreed that it was important to differentiate medical cannabis from legalisation of recreational cannabis in order to pass medical cannabis laws. Separating medical cannabis from the broader legalisation issue has played a major role in the medical cannabis policy debate. This also has political importance as medical cannabis can be seen as an issue of compassion and is generally more accepted by the public, while drug legalisation is more controversial and there is generally less acceptance.

“I think the attempt to make it a medical- human suffering- definition has played a role...perhaps medical marijuana passing where legalisation/decriminalisation did not. So I think the attempt to differentiate them probably has played some success in medicalisation” (G4-1, U.S.).

“Personally, I think that many of these advocates for legalisation of marijuana are being a little disingenuous by saying “No, no, we’re not necessarily going for legalisation of marijuana for everyone today; we’re just going for medical marijuana.” And so I think that their

arguments are a little disingenuous; whether they're right or they're wrong. But, I do think it can be very effective" (G4-7, U.S.).

"Well, you know the saying, that with respect to drug policy, you should probably restrain from using the term 'legalisation' in case you wanted to push through something which is really useful and acceptable by the public and decision makers...." (G4-3, Czech Republic).

Science vs. politics. Another common theme in the Group Four study was the interplay of science and politics in the policy creation process. Politics can impede the use of science in the policy process and can sometimes overwhelm it. As a result, it was implied by some participants that scientists conducting research should be more aware of political issues and the political process in order to make science an essential factor in informed policy creation.

"I think right now there's still a lot of fear and a lot of politics-driven issues that are affecting policy; more so than scientific evidence" (G4-6, Australia).

"I think that probably scientists have to be more aware of political issues, political debates, and things like that. Because, in my PhD I showed that the scientific evidence...that the translation of scientific evidence in politics, how it's framed and things like that, is done by political actors. Rather, political actors translate scientific evidence rather than scientists themselves" (G4-9, France).

Interest: who stands to win or lose? Participants also considered interest groups, or who stands to win or lose if a particular law is passed or fails to pass, as one

of the factors influencing policy formation. Group Four participants discussed the role of interest groups and suggested that, especially in terms of medical cannabis, there were various groups and organisations who stood to win if the law were passed as well as those who stood to lose both power and financially. Interest groups can have political significance when they try to influence public policy, propose new laws, or persuade government officials to act in their interest. Over the years, the activism and influence of interest groups has expanded, and they now play a significant role in the U.S. political system (Singh, 2003). As discussed in the state by state review, pharmaceutical groups also stood to lose money if cannabis was legalised and suggestions were made that the reluctance to adopt new drug laws came mainly from the pharmaceutical industry's concern that they would suffer significant monetary loss should cannabis be legalised (Andrews, 2007a; R. E. Martin, 2007).

“I think that the business- cannabis as a business- has definitely played a role. The profits that are available... because the business has continued to push forward a desire to see policies change and for them to operate more freely. I think that there has been a huge role” (G4-10, U.S.).

“...it wasn't so much an argument about medicine/no medicine; it was an argument about economics of distribution” (G4-4, U.S.).

“Because the DEA agents with the police already have a position, and they're already powerful, and they already exist and have interests- they are in a much better position to fight for those interests than people who may have a benefit sometime in the future and don't really have

something concrete to grab onto, and don't really have those levers of power to work with" (G4-7, U.S.).

The influence of public opinion. The participants believed that, especially in the medical cannabis field, public opinion was taken into account by the individuals involved in policy creation. However, they also believed that the role could be reversed and public opinion be influenced by those in the policy creation field. Public opinion also had an effect on the use of evidence in policy formation, as sometimes public support for a particular issue was seen as more important than the scientific evidence available. As discussed in Chapter Four, public opinion is also likely to play more of a role in states with an initiative process, while science tends to have more impact when a law is being passed by the legislature.

"You know...they give you all the organising you want to and if the public wasn't crying out- then nothing would happen" (G4-5, U.S.).

"In my mind, in cases...once the public gets involved, evidence may be wielded as a weapon by one side or the other; but they're not making their decisions based on the science. The only time that I really think that science is going to be used by policy makers is when it's the policymakers who are making the decision; not when the politicians are appealing to the people. And so...in cases where a committee is making a decision pretty much behind closed doors, or if it's something that people [don't] really care about or don't really have an opinion about most of the time; then science will play a large role. But, in cases where

people are really excited and really fired up, I don't think that science plays that large of a role" (G4-7, U.S.).

Ballot initiative vs. legislature. The participants also agreed with previous findings that there is a difference between factors involved in passing medical cannabis laws via a ballot initiative and those passed by the legislature. The participants were inclined to believe that giving constituents the power to pass laws contributed to the success of passing medical cannabis legislation in some U.S. states, especially in the early stages, as the voters were more willing to have policies changed. Five participants believed that public support of an issue was important, but diminished the role that scientific evidence played in influencing policy. Conversely, participants suggested that medical cannabis laws passed by the legislative process were more thought out and were more likely to be informed by scientific evidence.

"A real problem is that you can go through the state legislative process where you may have some scientific evidence about medical marijuana. Other states, since they went through a ballot initiative, it became more of a popular referendum than a scientific discussion" (G4-1, U.S.).

"The fact that it happened initially through ballot initiatives is no coincidence. There have been proposals in the legislatures- even in the federal government- to decriminalise recreational use of marijuana or to allow things for medicinal purposes, and none of that gets by legislature. And it really was... it's going directly to the populace and appealing to the populace that caused some of these initiatives initially to pass, and that gained momentum" (G4-10, U.S.).

“I think that the states that adopted laws through voter referendum initiative process, which was the first grouping of state medical marijuana laws, they relied more on advocates using science to promote a position. I think in the legislatures- when they were passed by legislative bodies- there was an opportunity to consider a broader look at science.... And some of the legislatures, such as Hawaii which passed the law in 2000, saw this coming in their state and went about it more judiciously through the legislature as opposed to allowing it to get usurped and put on as a ballot initiative” (G4-10, U.S.).

The initiative process enables citizens to put an issue on the political agenda which may not be seen as important by the decision makers, and allows the general public to make decisions away from the influence of government. However, some may think that with voter initiatives, all that has to be done in order to pass a law is convince the public. This in essence reduces the use of scientific evidence as intended by researchers, with scientific evidence potentially used as a means of convincing the public to support a particular issue rather than informing it and increasing its knowledge.

“So a lot of these things have happened by a voter initiative and so they just sort of have to convince the public. So to the extent that scientific evidence is used to help convince the public that there are people with a medical need out there, then I suppose it’s having an effect; but it’s probably an indirect one. There seems to be a lot of demagoguery on either side in that kind of environment” (G4-5, U.S.).

Factors politicians have to take into account. As discussed in the earlier chapters, there are many factors other than evidence that politicians need to take into account when making policy-related decisions. Factors such as getting re-elected, how they are perceived, political ideology and funding are very important in influencing politicians whether or not to support specific legislation. Group Four participants mentioned that, in terms of medical cannabis, politicians usually look at more than just proof of the therapeutic benefits of the drug, but instead consider other factors such as efficacy, alternative medication, and economic advantages/disadvantages. Interestingly, the most commonly mentioned factor was scientific evidence. However, the participants concurred that scientific evidence plays a significant role when it is the policymakers who are making the decision, such as when laws are passed by the legislative process, rather than when a law is passed via the initiative process. Otherwise, the politicians look to the decisions that are supported by the public and that will get them re-elected. The participants also acknowledged the roles of various other factors, including funds, extreme events, global perception of drugs and international standing, public perception, ideology, lobby groups, laws in other states, policy advice that they receive, politics/policy issues, and public health issues.

“The only time that I really think that science is going to be used by policy makers is when it’s the policymakers who are making the decision; not when the politicians are appealing to the people (G4-7, U.S.).

“What do I think they make their decisions based on? Whoever donates to their political campaigns and whatever they need to do to get re-elected is my cynical answer” (G4-4, U.S.).

“The largest thing that comes into account for them is- can this come back at them? If they make this decision, can there be something concrete and high-profile, something with a perception of dread and the unknown that really, really amplifies...that makes something coming out of it to be really dramatic. The politicians’ perception that this could come back to bite them. I think it definitely suggests that a politician be cautious that they go to status quo, that they don’t try and allow more medical trials because it’s a lot harder to be dinged for a nebulous inaction than for a specific concrete action” (G4-7, U.S.).

“They need to take into account the various pressure groups who are always trying to influence them in one direction or another....They need to take into account the kind of policy advice they receive from the public service; the quality and nature of which is incredibly variable, depending on a lot of factors” (G4-2, Australia).

State differences. The responses of Group Four participants indicated that there were differences between U.S. states that could determine whether legislation, such as medical cannabis, was passed or not. These differences mainly focused on whether or not a state had a ballot initiative process, as well as how the state attempted to pass legislation. It was suggested that the U.S. allowed variety in terms of how policy is made and implemented within a state, and the way that scientific evidence is used. As seen in the state by state review, medical cannabis advocates and opposition groups can be more active in some states than others and tend to choose where they will allocate their time and resources. States were also found to be inclined to follow happenings in other states and improve on previously passed legislation; such was the case in relation

to medical cannabis legislation. As discussed in Chapter Four, policymakers should look to other states to creating effective medical cannabis laws, which may then lead to a more uniform approach to medical cannabis across the states.

“Dependent on the state, dependent on the time- some states would move toward medical marijuana and then back off. Some states you grow your own; some states you don’t. Michigan has a real problem in, it doesn’t know how to deliver the medical marijuana....I think in some states it may be one of those elements [influencing policy] may be stronger than in others” (G4-1, U.S.).

“... I think that some knowledge was gained in the preliminary ones that helped legislatures devise policies that meet the needs of all constituents, not just the advocates for change” (G4-10, U.S.).

“I think the success that California has had- being the first state to pass a medical marijuana proposition. So other states have seen that and said “Oh, look! We can do that”. I think it’s greatly affected it. I don’t know if any other state would have had the idea. I mean, 1998 was pretty early. So, it’s been more reasonable than the past five to seven years, but I think California’s passage greatly affected the rest of the states” (G4-6, Australia).

Anecdotal evidence and testimonials. Another theme discussed by Group Four participants was the use of anecdotal evidence and patient testimonials in the medical cannabis debate. Participants believed that, in terms of medical cannabis policy, anecdotal evidence was widely used and played an influential role. Participants also

suggested that patient testimonies on the use of cannabis as a medicine were used to portray a particular image of cannabis as a medicine and the individuals using the drug for medical purposes, in order to influence policy.

“Lots of information was reported to the average person through the newspapers and through the media. And the source of that information was largely anecdotal. That doesn’t mean that it wasn’t valid or useful, but from a scientific perspective it wouldn’t be viewed as rigorous as a large informed study. But there were no large informed studies, so that’s what they had to draw on” (G4-10, U.S.).

“.. I don’t think that, in the United States at least, we’re discussing matters of medical fact very much. We’re using a lot of anecdote, but I don’t know how much we’re using factual data....” (G4-7, U.S.).

“I think in all of those states, and certainly in California, you have these testimonials of people who were in general community law abiding, productive citizens, who use cannabis to control nausea or pain and have gotten what they see as being great relief from it. And they give emotional testimonials to the benefits of cannabis. I think those also play a big role.” (G4-4-, U.S.).

Politics and policy. There are also politics-driven factors which can drive policy, more so than scientific evidence. According to Kingdon (1995), the politics stream comprises political issues such as election results, interest groups and public opinion that need to be taken into account. Group Four participants also suggested that the nature of politics and the political system can affect scientific evidence and its

ability to inform policy. Issues such as political ideology are another aspect of the process that was mentioned by participants who believed that medical cannabis policy was driven and affected by ideology, more than by scientific evidence.

“Well, I think the cannabis policy is far more politicised and the result of a 30, 40, 50 year battle of ideologies...” (G4-4, U.S.).

“I guess one of the really big impediments to using the scientific evidence in thinking about medical cannabis is the highly political aspect of it. By political, I’m thinking of party politics. And I’m also thinking of issues of power more broadly- about who controls whom in society” (G4-2, Australia).

“I think there’s also the political ideology that plays a major role. I think...you have a bit of libertarian ideology in the United States. One of the...political movements in the U.S. right now is libertarianism. In which the governments should not interfere with the daily lives of its citizens....And I think libertarianism has been an increasing force in medical marijuana policy. That the government shouldn’t interfere; that medical marijuana often becomes a part of the legalisation/decriminalisation rubric. So, that kind of policy discussion probably is stronger than the medical/scientific discussion” (G4-1, U.S.).

The role of advocates. Similarly to Groups One and Two, Group Four respondents rated advocacy groups as playing a major role in the creation of medical cannabis policies. The respondents believed that advocacy groups for both sides were

effective in raising the awareness of the issue and influencing public opinion. According to participants, one of the reasons why advocates played an important role was their ability to “sell” the issue to the public and policymaker. The question raised, however, is how much of the advocacy groups’ stance is based on scientific evidence. As previously mentioned, both medical cannabis opponents and proponents tend to selectively use scientific evidence to support their arguments, ignoring the bigger picture.

“I think that advocacy in this area makes a big difference; it clearly has in the case of marijuana. Because things that people might do and talk about at the federal level they can’t do, because of international agreements or unwillingness, can be done at a more grassroots level, and our structure of government at the States allows that. So advocacy has definitely played a role. And when I say advocacy I should be clear; I don’t just mean advocacy for people changing the law- I mean advocacy for people opposed to the law” (G4-10, U.S.).

“I think...advocacy is very, very strong. Advocacy of medical marijuana and drug policy is strong in the United States- as for being so extreme on general drug policy laws....So in terms of taking the research out and selling it to the media and to the public and to policymakers- I think they’ve done a really good job” (G4-3, Czech Republic).

“I think that their dogged efforts are bearing fruit. I think that these things take a long time, but...I think they’re having an effect on public opinion; maybe using some scientific evidence- at least the scientific

evidence that they favour. But some evidence anyway to change people's minds about things" (G4-5, U.S.).

While the participants believed that advocates play a role in the policy making process, they suggested that they are not always necessarily basing their arguments on scientific evidence. Additionally, participants stated that advocates sometimes used scientific evidence to further their position, even if that position was not always based on science.

"I think the science was used for advocacy purposes and not presented by scientists per se. Some scientists were the ones presenting it, but again it was used to promote a position as opposed to comprehensively review everything we know and what we don't know and whether it was enough to make decisions" (G4-10, U.S.).

"And on the other side of things, I think that this is a big enough issue – and it's gotten enough attention – that I don't think that advocates on either side are basing their opinions on the scientific evidence. I think that they're picking their facts to fit their side" (G4-7, U.S.).

The importance of what is advocated. Participants suggested that some medical cannabis advocates advocated for both medical and recreational use of cannabis. Not making a distinction between medical and recreational use of the drug could hurt its chances of being made legally available for medical purposes, as medical use of cannabis is generally more accepted than general legalisation.

"But I think the groups that are advocating for medicalisation have also tended to advocate for legalisation. I think that they have done some

attempts to separate, and that has been successful for medical marijuana...” (G4-1, U.S.).

“I find that many people who are on the pro-medical marijuana side are...they make a strong argument for medical marijuana, but they also make strong arguments for legalisation of marijuana for everybody...”
(G4-7, U.S.).

Perceptions, morals, and ideology. Apart from evidence, there are also factors such as how an issue is perceived, people’s morals and ideology that those involved in policy creation need to consider. Even factors such as how drug users are generally perceived can influence whether or not a medical cannabis policy will be passed. Are medical cannabis users seen as drug users or is a more compassionate stance taken and they are viewed as people who are suffering and are in need of a medicine? Group Four respondents mentioned the role of individual belief systems and their perceptions of politicians and drug users. According to the respondents, even factors such as fear were influential in passing or failing to pass medical cannabis policies. When we look at the history of medical cannabis in the U.S., it has been viewed as different things at different points in time, such as a medicine in the early 1900s, an evil drug in the 1930s, and again as a potential medicine in recent times.

“Fear was a big part of it- if you smoke pot you’ll be a heroin addict. Belief systems are still out there in the community and amongst some conservative parents groups and all of that that you still heard...So there are both of those” (G4-4, U.S.).

“And so I still think that the first most important thing is the conception or the construction of the people who use drugs. And the second thing is the construction of the politicians, insofar as what makes a good leader. And I think that construction of what makes a good leader is changing....These constructions play a much larger role than the science behind it....So I guess the main factor- one of the main factors- would be how the users of drugs are viewed- are they constructed as the other, are they constructed as good or bad, weak or strong?” (G4-7, U.S.).

“Now, linked to that is the issue of morals and values that different people hold about the appropriateness or otherwise of using cannabis under any circumstances. And that- those moral issues- don’t apply to a lot of other medications” (G4-2, Australia).

The role of organised networks. The role of organised networks, such as NORML, was also mentioned by Group Four participants who stated that organisations played a role in the passage of medical cannabis legislation in some states. However, the participants also believed that organised groups only had an effect when they worked in conjunction with public opinion. It also depends on how well organised the networks are and where they chose to focus their efforts.

“Well, I mean, the Soros Foundation, you know...I’m sure you’ve run across that...has played a major role. As well as, of course, NORML, as an organisation that played a major role” (G4-1, U.S.).

“...but also organised groups. Like, California in particular has a really good organised network of people in the medical marijuana – or even

marijuana generally – reform community. And these people are really well organised and they’re really motivated, and they make things happen in their state, in conjunction with the public opinion. ...they give you all the organising you want to and if the public wasn’t crying out- then nothing would happen. So I think you need those things” (G4-5, U.S.).

Overall, it was concluded that policy making is an ongoing, complicated process depending on a number of different factors. The factors are required to come together in order for a change to occur or a policy to be created and passed. It was also suggested by Group Four participants that the process is multidisciplinary, and required individuals in different fields and levels to work together.

“...it remains a very complicated process which the science informs, but doesn’t really decide political polemics...I mean, there’s no clear answer. It’s a very mixed bag of polemics. In some ways, yeah, you have to always be a part of the political process. It’s a never-ending process” (G4-1, U.S.).

“...that there are what I call a policy network or existing communities that are ...in these networks there are scientists, there are lawyers, there are politicians, there are also medical practitioners...that are working together to do some research, to find some evidence to unearth, to impact policies” (G4-9, France).

Discussion

Group Four participants were sought for their expert opinion on the drug policy process. One of the major themes to come out of the study is the need for further research into medical cannabis. However, what is important when conducting such research is that it is the type of research that matters to policy makers. Otherwise, it will be difficult for the evidence to enter the policymaking arena and have major influence. In order to identify the type of research required by the policymakers, a collaborative approach between those involved in policymaking and the researchers is needed. However, this is no easy feat.

While there has been a significant progress in the use of technology and social media over recent years, ways of presenting and communicating the evidence has not followed suit. Ritter (2006) found that politicians most commonly sourced information by consulting an expert or technical reports, monographs and bulletins. Accessing the internet and using statistical data were the other two most common sources of information. A question then arises is why, with all the information available to them, are the politicians not following the evidence? Researchers also need to make the evidence more accessible, and to do this there needs to be a shift in how we communicate with those we would like to inform, such as increasing the use of internet and social media to promote research findings. If scientific evidence is to play a bigger role in the policy making process, we need to look beyond the evidence into how we can promote it and disseminate it effectively. As one Group Four participant said that “the evidence alone never speaks for itself” (G4-2, Australia).

Another theme that was raised by Group Four participants was the issue of direct democracy and whether policy decisions should be left up to the public, which can oftentimes be uninformed but expected to make important decisions. In terms of ballot

initiatives, care needs to be taken that they do not become more a popular referendum than a scientific discussion. Most Group Four participants were also inclined to believe that advocacy groups played more of a role in the laws passed via the ballot initiative. The participants also felt that the legislative process met the needs of the constituents rather than the advocates and also tended to be more influenced by the evidence. There is also an indication that states which pass the laws through the legislature have more scientific debate. The findings also suggest that, with the laws passed through the legislative process, there was an opportunity to consider science more broadly. As one participant stated:

And now it's becoming more common to see these as legislative processes which have thought through the implications of access and supply, as well as how do you reconcile this with the prohibition on recreational use. And those sorts of issues and the nuances were not so well thought through in the initial ballot initiatives. (G4-10, U.S.).

The highly political aspect of medical cannabis can also be an impediment to the use of evidence. There is the issue of federal versus state power, where direct democracy measures have created a conflict between state and federal governments (Ferraiolo, 2008; Hall & Degenhardt, 2003; McDonough, 2000; Pickerill & Chen, 2008). The question that arose is whether states should be able to decide for themselves whether to legalise cannabis for medical use or if the federal government should regulate this area of policy (Pickerill & Chen, 2008). There are also interest groups who play a major role in states with the initiative process, and who have both monetary and organisational power to have a big impact on public opinion as well as policy creation.

In terms of politicians, evidence may not have a direct effect on agenda setting or politician support. There are a number of factors politicians need to take into account, with one of the most important being getting re-elected. As previously mentioned, politicians need to carefully consider the timing of their decisions to support or oppose particular legislation. Politicians also need to consider the impact and benefit of their decisions, and what happens in the future. Other factors include, but are not limited to campaign funding (who provides support for their re-election and how the decision to support or oppose particular legislation will impact fund raising); how they are perceived; international standing; lobby, pressure, and interest groups; political ideology; what happened and is happening in other states; public opinion; scientific evidence; and the policy advice they receive. Scientists interested in informing policy need to consider these factors and create the sort of evidence that fits in with what politicians need and are looking for. For example, one Group Four participant suggested that:

They [politicians] are looking for the sound bites. And scientists need to be aware of that. Sometimes you can only get a politician's attention for 5 or 10 minutes and need to reveal and tell a general gist in that 5 to 10, and be OK with the fact that you can't give all the qualifiers and the nuances and you weren't able to do this and that and that... We as scientists sometimes want to provide all the situation, and we can't communicate that in the attention span of either the politicians or of the average person. (G4-10, U.S.).

Findings also indicate that media can filter scientific evidence, and can be selective as to what is or is not put forward to the public. One participant said that “the

public does not have direct access to scientific evidence. It's all filtered- primarily through the mass media" (G4-2). What needs to be considered then is how well the media filters the evidence and whether or not it is done in an objective way. Another question to be considered is where the media gets its information from and what its sources of "scientific evidence" are.

While a number of factors play a role in the policy process, in terms of medical cannabis one question deserves significant attention: if cannabis is a medicine, why is it not being treated as such? The evidence indicates that cannabis does have potential as a treatment for some debilitating medical conditions. However, the findings of this study indicate that cannabis is not treated as a medicine in the sense that the process of making it legally available has been different from the process other medicines have to go through, such as the FDA approval process. Medical cannabis is not obtained from a normal drug store as other medicines are, but is instead grown by individuals or distributed by special dispensaries. As a result, it is difficult to determine what "medical grade" cannabis is and what appropriate dosages are, as it is left to the individual and not a medical professional to determine these. In Los Angeles alone, it is estimated that there are around 750 medical cannabis dispensaries (Linthicum, 2012). In order to regulate the distribution of medical cannabis and after complaints and calls for restrictions from the mayor, the police chief, the city's attorney office, and the residents' groups, a city ordinance was passed to shut down most of the dispensaries (Linthicum, 2012). The federal government also got involved and started issuing letters to dispensaries stating that they are violating federal drug laws and that, despite the state's medical cannabis law, federal law takes precedence over state law. The potential negative effect of this is that patients unable to grow their own cannabis or obtain it

from a dispensary may expose themselves to risk by obtaining it from the black market, where the quality of the drug is difficult to control. This would not be an issue if cannabis were recognised as a medicine and obtained in the same way other medicines are.

There is, however, a difference between medical cannabis and other medicines: cannabis is not recognised as a medicine by the FDA. As previously discussed, all medicines in the U.S. must be approved by the FDA; in order for cannabis to be approved as a medicine, it needs to go through the FDA approval process. In order for a medicine to be approved it needs to be proven that it is safe and effective, and that its benefits outweigh the risks (Federal Food, Drug, and Cosmetic Act, 2000). So why is cannabis not approved by the FDA? According to the FDA, evaluations by several departments have concluded that “no scientific studies supported medical use of marijuana for treatment in the U.S., and no animal or human data supported the safety or efficacy of marijuana for general medical use” (FDA, 2006). The results from the literature review conducted in Chapter Two indicate otherwise; there are clinical trials which have shown that cannabis has medicinal value and potential to be used as a medicine for some medical conditions.

However, the difficulties arise in relation to how the appropriate dosage would be determined, what an appropriate route of administration would be, and what the ingredients of medical cannabis would be. Moreover, as stated in Chapter One, there are still many unidentified components of medical cannabis, making it difficult to approve it as a medicine. The research so far has not clarified these issues, as one Group Four participant put it:

I think one of the major issues of medical marijuana is, if it is going to be “medicalised” we really haven’t gone to the process of defining dose, purity, how we manage and how we distribute it. Medical marijuana rendered to a real problem of how you would distribute it, how you would label it, define it, decide on a dosage level. In most states, the delivery mechanism is difficult. In a few states, you grow your own. Well, that’s kind of complicated. I mean, would you grow your own penicillin? It has some real quality problems”. (G4-1, U.S.).

If medical cannabis laws are to be driven by science, then scientific research needs to be enabled by re-classifying cannabis, providing funding for such research, and allowing researchers access to medical-grade cannabis. Doctors need to be able to prescribe the drug and determine the right dosage for the patient, and this will not be possible as long as cannabis remains in Schedule I of the CSA. Cohen (2006) speculated that, had cannabis not been included in the CSA and was taxed and regulated as are alcohol and tobacco, “every ‘medical marijuana’ case would have been moot. And under this scenario, as long as smoked marijuana was not advertised as a FDA-approved pharmaceutical....it would undoubtedly have become one of this century’s premier herbal medications” (p. 22).

Study limitations

As with the previous studies, there were some unavoidable limitations with the Group Four study. One noteworthy limitation was generalisability. In Group Four, the sample was varied and consisted of ISSDP members from three continents, the U.S., Australia, and Europe, who conducted drug policy research. The individuals had varying degrees of familiarity with the medical cannabis debate, but all conducted

research on drug policy. It is not possible to demonstrate that the sample was representative of the population; therefore caution must be exercised in generalising conclusions beyond the medical cannabis policy or policy field. Because it is such a specific and somewhat controversial topic, there was also potential for bias, especially due to a small sample size. However, the participants were chosen for a specific purpose, and that is due to their expertise in the area of drug policy. As such, we cannot make generalisations about the total population from this sample because it is not representative.

The participants were identified through an ISSDP-supplied contact list and were asked to participate due to their experience in the drug policy area. While the study sample may have been biased due to non-random selection, as they were not identified as being directly involved in the medical cannabis debate it was anticipated that Group Four participants would be able to provide an objective appraisal of the medical cannabis policy process. Literature suggests that elites such as politicians and experts are busy people with time constraints and can also have distrust in the purpose of the research or the trustworthiness of the researcher. The researcher therefore attempted to make direct contact with this group of participants and establish rapport before interviewing them. Face-to-face interviewing would have been preferred but was not possible for the purposes of this study due to money and time constraints, and the location of the researcher. As Nulty (2008) said, “whether or not a response rate is adequate depends (in part) on the use that is being made of the data” (p. 307). In this case, the data were treated as expert opinion on a particular topic, providing insight into expert views of the medical cannabis policy process in addition to already established findings. To decrease bias and to reach generalisability of data, future studies may want

to increase sample size and identify experts from a range of sources, rather than participation in one particular group such as the ISSDP.

Chapter 7- Discussion

This study aimed to identify the main issues pertaining to the development of medical cannabis policies in the U.S. This study was conducted in two stages. The first stage was a state by state review of the medical cannabis debate in five representative U.S. states to identify which factors played a role in the passing or failure to pass medical cannabis laws in those states. The second part of the study involved using a questionnaire and telephone interviews to further explore the factors which influenced the medical cannabis policy process from the perspective of those directly involved in the process, researchers not directly involved, and drug policy experts. This discussion section is framed around the central research questions and the themes and sub-themes that emerge from what has been presented in the previous chapters of this thesis. That is, it will pull together the themes and sub-themes that emerge across the whole of the study to discuss the overarching themes and answer the three research questions.

The literature review completed in Chapter Three indicated that cannabis has medicinal properties, but further research is required to explore the efficacy and effectiveness of cannabis in the treatment of specific medical conditions, identify which conditions the use of cannabis is best suited for, the appropriate route of administration and dosage, and the long-term consequences. While the long-term effects of medical cannabis use are difficult to assess it was also noted that this can be experienced with other conventional medication and is not considered a major problem in the medical use of cannabis. For conditions which aren't always successfully treated by other medicines, medical cannabis may also be a beneficial addition to treatment or management of the condition (Zajicek, et al., 2003). Therefore, further studies of medical cannabis are

encouraged. In relation to the importance of increasing knowledge of medical cannabis, Strang et al. wrote:

In its absence, public policy will continue to be made with premature foreclosure of debate in the face of uncertainty by using arbitrary rules about which side in the debate bears the burden of proof- those who defend the status quo or those who wish to reform our cannabis laws. (p. 110).

One way to overcome the issue of mixed and unclear evidence would be to conduct more research into cannabis as a medicine, especially smoked cannabis. However, the difficulty lies in cannabis being a Schedule I substance in the CSA, making it difficult to obtain research-grade cannabis and conduct studies. This issue is discussed in detail throughout the thesis, and more specifically in Chapter Six. The history of drug policy in the U.S. also shows that it is a complex process, and while there were some shifts at the state level towards recognition of medical cannabis, the attempts have largely been ignored by the federal government who maintain that there is currently no evidence to support cannabis' rescheduling. However, the fact that the drug is placed in Schedule I creates a barrier to research. This has been summed up by the Martin and Rashidian (2014) statement that "Cannabis is a Schedule I because there is not enough federally approved research, but there is not enough federally approved research because cannabis is a Schedule I" (p.29). Therefore, the first step towards evidence playing a bigger role in medical cannabis would be for it to be rescheduled. In the absence of that, other ways of giving evidence more prominence in the medical cannabis debate need to be explored. As one Group Four participant put it:

“I think in the future- especially if we can think about re-classifying or rescheduling drugs that are currently scheduled as Schedule I- I think scientific evidence will play more of a factor....I would say it’s got to be reclassified. It’s got to be rescheduled. People need to have access to it in order to do studies, and studies need to be funded and backed by policy or backed by U.S. federal government” (G4-6, Australia).

What also needs to be addressed is the sort of research that is being done. In terms of medical cannabis, it may be wise to separate the whole plant from its compounds. It is highly unlikely that due to side-effects associated with it, smoked cannabis will ever be approved as a medicine by the FDA, but there is potential for other compounds to be made into pharmaceutical products (Hall & Degenhardt, 2009; Martin & Rashidian, 2014). In the absence of a pharmaceutical product, the role of whole plant cannabis also needs to be further explored, especially in the light of state medical cannabis initiatives which have legalised smoked cannabis for medicinal use. It is also important to consider how the use of evidence in policymaking can be approved, and this is discussed next.

Kingdon (1995) described policy formation as the result of three processes or “streams”; the problem stream, the policy stream and the politics stream. The problem stream is related to matters requiring the attention of decision makers. It is important to note that not all problems are given such attention. The policy stream involves proposals for change. This implies that before a problem can reach the decision making agenda, decision makers need to be given at least one solution to the problem. Kingdon states that decision makers will prioritise problems where someone like the administration or

the scientific community can provide them with a constructive solution. The politics stream comprises issues such as election results, interest groups and public opinion that need to be considered. The three streams are independent of each other and for the most part operate independently, until they come together and a “window of opportunity” opens for policy change. For scientific evidence to influence the policy agenda, information would need to be readily available when “windows of opportunity” open (Kingdon, 1995).

Another issue that needs to be recognised is that evidence is used in different ways by the actors in the process. Cherry-picking, or selective use of evidence, was a frequently occurring theme throughout this study and is discussed in more depth in Chapter Four (p. 239). What this study found is that the three main arguments frequently used for opposing medical cannabis legalisation were unproven safety and effectiveness of cannabis as a medicine, cannabis as a “gateway drug” that leads to use of more serious drugs, and sending the wrong message to the public that cannabis is safe for recreational use. Medical cannabis opponents argue that there are already medicines available that can treat symptoms and conditions for which cannabis has been shown to be effective while supporters argue that cannabis can be used as a medicine for a range of medical conditions including some which have not had strong scientific support. Supporters also argue that cannabis has less abuse potential than drugs such as alcohol, tobacco, and cocaine. In essence, evidence is used as ammunition in the fight, but there is little acknowledgement by either side of the complexities and incompleteness of the research evidence. As the debate tends to be oversimplified, what usually seems to be omitted is the rational middle ground, one which objectively assesses the benefits and costs of cannabis use.

This lends support to Weiss' (1991) assertion that one of the ways the research enters the policy field is as research to which an advocacy position has been added and used by policymakers and/or interest groups to support their position. The problem that arises when research enters the policy field in such a way is that the some findings tend to get selectively lost as they give way to findings that support a particular argument (Weiss, 1991). This problem can be overcome by bridging the gap between what knowledge is needed by policymakers and what is provided by researchers, as well as what the research tells us and how the information gets used by the policymakers (Ritter, 2011; Weiss, 1977, 1979). There are also concerns about what sort of evidence is deemed "acceptable" by policymakers, who can select evidence that suits specific political agendas and to seek justification for their decision on policy (Bacchi, 2009; Nagel, 1990; Weiss, 1998, 1999). This is made more complex by the nature of evidence available which is often vast, uneven in quality and inaccessible to policymakers (Brownson et al., 2009; Davies et al., 2000). More medical cannabis research is also needed to assist creation of more evidence-based policies and making the evidence more accessible to policymakers and the public (Strang, Witton, & Hall, 2000).

However, having a debate about the evidence may not necessarily be a bad thing. In an article that can still be applied to what we have seen in the medical cannabis debate to date, Majone (1979) said that "The real problem facing regulating bodies today is not the existence of conflicting expert opinions, but the inability of existing procedures to channel disagreement toward constructive purposes" (p. 572). While Majone recognised that regulatory decisions are increasingly based on arguments and judgements about competing benefits and risks rather than facts, he also encouraged this conflict as a way to educate the public. Because public opinion plays a significant role

in influencing policy, it is important to consider how well informed the public is and what sort of information they are getting.

Ideally, scientific evidence should always be incorporated in selecting and implementing programs, developing policies, and evaluating progress (Brownson, et al., 2011). The approval of any drug for medical use should also ideally be based on evidence rather than political considerations (Cohen, 2010). However, this study is consistent with the literature which finds that the policy process is inherently political and does not rely solely on research evidence (Anderson, 2003; Brownson et al., 2009; Brownson et al., 2011; Pentz, et al., 2004; Ritter, 2011). If research evidence was used to drive policy, then cannabis would be recommended only for use as a medicine for the conditions that the evidence supports, with some flexibility in relation to a conservative or liberal interpretation of the research evidence. Smoked cannabis would also not be the preferred route of administration. However, this is not the case in those states which have enacted medical cannabis laws. For example, in New Mexico, medical conditions included in the law go beyond the scope of currently available evidence and is also open to adding other medical condition as approved by the NMDH. This supports Weiss' "enlightenment model" that the impact of research on policy is not direct, but research is instead seen as one of several sources of information available to policymakers (Weiss, 1977, 1979). The other factors which were found to influence the medical cannabis policy process are discussed next.

The findings of this study have indicated that scientific evidence does play a role in the policy process, but not as significant a role as one may think, or as scientists may like. While scientific evidence is one factor of influence, it is often not used in the manner scientists would prefer but rather as ammunition to support an already adopted

position. Contrary to what is generally believed, the medical cannabis process appears to be less medically and more politically driven, and scientific evidence tends to fall behind in its level of influence (Black, 2001). In this study, it is suggested that political issues play a more central role than evidence. Factors such as the decoupling of medical cannabis from wider moves to decriminalise or legalise cannabis are important, as are anecdotal reports of those who have or could potentially benefit from medical cannabis, and organised, well-funded advocacy groups. National advocacy groups can play an important role, especially in states with a ballot initiative process. The success or failure of a law can also depend upon context, timing, and persistence. As the U.S. is a democratic republic, it is important to consider public opinion, which tends to play more of a role in the states with a ballot initiative process. Public opinion is also taken into account by politicians making policy decisions, amongst other factors that they need to take into account, such as whether making a certain decision will work in their favour or against them. While the support of powerful politicians can be important, as in the case of New Mexico, lack of such support does not prevent such laws being enacted, as the case of Michigan illustrates.

There are many factors which need to be taken into consideration when looking at the political process and how certain laws are enacted. When questioned about the factors influencing the medical cannabis process, there was no major difference noted in terms of the importance of the factors. Depending on the person and the context, generally all the factors identified in this thesis were rated as important. While the factors mentioned in Chapters Four to Six can affect the policy process, they are not free-standing and there is a relationship between the factors. There is a complex relationship between science, public opinion, and political action and the decisions in

the policymaking process are the cumulative result of interactions between the many actors involved in the process (Kingdon, 1995; Sabatier, 1999; Speck, 2010; Wolf, 2000). In the case of medical cannabis, media coverage can influence public opinion, which in turn can influence political actors. For example, the review of the five states indicated that there was significant media coverage of the medical cannabis debate in Michigan. This resulted in national organisations putting their efforts into passing a medical cannabis law in that state. As the law was passed by a ballot initiative, the public had to be informed in order to make a decision and vote for or against the issue. The national advocacy organisations used media in order to promote their stance, and while the opposition attempted the same, it did not do it on a large scale. In New Mexico, there was a similar relationship between the media and the public, except that New Mexico does not have the ballot initiative process, and the focus there was on getting the support of the politicians. It is evident, based on the previous discussion of what politicians take into account, that they took heed of public opinion whilst deciding whether or not to pass a medical cannabis law. While it is difficult to conclude that had media portrayed the issue differently or not portrayed it at all, it would not affect the public's perspective on the issue and that the laws would have been passed anyway, it is also possible that the interplay between the three factors positively influenced the outcome.

Kingdon (1995) viewed the three policy streams in his model as separate until they come together to create a policy “window of opportunity”. Kingdon viewed these three streams as largely independent of each other. While going beyond agenda setting, the findings of this study indicate that the different factors co-exist and interact in multiple ways. Some argue that a single framework cannot explain all its facets and it is

difficult to reach consensus on which is the “best” or most satisfactory approach (Anderson, 2003; Weible et al., 2012). This thesis did not focus on a particular framework instead adopted the approach of the Institute of Medicine (IOM) (1999) study which recommend commencing policy analysis by describing what happened with no predetermined framework identified. However, future studies may use a framework to attempt to explain the policy process. One framework, based on Kingdon’s (1995) policy stream model, that could potentially prove a good explanation for the medical cannabis policy process is described by Howlett, McConnell, and Perl (2013) as “A Five Stream ‘Confluence’ Model”. This incorporates five different streams and involves thinking about policymaking as a sequence of stages of the policy process, and sees the streams as interacting and nested within others.

It would be difficult for the factors identified in this thesis not to interact. For example, in relation to scientific evidence and limited access to it by the general public, the media plays a role by filtering the evidence and presenting it to the public who then make their opinions known, and these opinions are then taken into account by politicians. Advocates also play a role in disseminating the evidence, as do the researchers themselves. This then creates a set of interactions, which, although not entirely predictable in terms of the outcome, have the ability to change the policy making process. However, timing is important and can determine the success or failure of the interaction. Researchers should understand that these factors should not be interpreted individually as they do not make the policy process on their own, but are rather part of a complex, interactive, and ongoing process, dependent on context and time. The goal is to draw lessons from each of the factors and their interactions and identify how science can best be part of the interplay.

The context in which a law change is proposed, finding the right timing, and most importantly, persistence, are also important factors to consider. In the states with medical cannabis laws reviewed here, the advocacy efforts have been widespread. Medical cannabis laws were not created overnight and were the result of persistent effort by medical cannabis supporters to put the issue in the public arena, raise public support and, in the case of Michigan, get the issue on the ballot. In the case of New Mexico, medical cannabis supporters were constantly introducing medical cannabis bills, sometimes more than one at a time. However, while the efforts in Illinois have been just as persistent, a medical cannabis law is yet to be passed. Kentucky and Louisiana have never had such efforts.

This is where the question of timing comes in. Throughout the literature, there are references made to the importance of timing in the political context: when a particular issue is introduced, when announcements are made and when bills are introduced (Gibson, 1999; Kingdon, 1995). Gibson (1999) argued that the timing of political events did not happen by chance, with politicians attempting to influence the timing in order to maximise benefits and draw public attention to a particular issue or draw it away if needed. In the case of New Mexico, this was evident in Gov. Johnson's decision to support medical cannabis in his last term as a governor, when he was not up for re-election. His views continued to cause controversy, and an article published in the *Chicago Tribune* noted that Gov. Johnson did not make his position on drug use clear until his second term as a governor. This decision, however, had consequences as his approval rating dropped by 11 points. It is therefore not enough to just put an issue forward but to identify the right time to do so, based on careful consideration of factors such as public support and sentiment and likelihood and desire of being re-elected. The

findings in this thesis support Kingdon's assertion that policy change occurs when a "window of opportunity" opens for policy change. Timing was therefore an important factor in medical cannabis policy creation.

Also related to timing is the change in the perceptions of medical cannabis. As discussed in Chapter One's history of medical cannabis, the public perceptions of the drug have undergone change in the past 100 years. For example, previous to 1914, cannabis was readily available in the U.S. (Grinspoon, 2000; IOM, 1999; Ruiz, et al., 2007). Then, gradually, in the context of major social reforms, the Harrison Act saw the federal government not only collecting taxes and ensuring registration of drug users, but also the prosecution of doctors that prescribed the drugs (McBride, et al., 2009; Musto, 1999). Cannabis' recreational use increased and it became popular among minorities, including African-Americans and Mexican immigrants, who were feared as a source of crime and deviant social behaviour (Musto, 1999). This saw the emergence of reports of negative effects of cannabis and the drug being viewed as evil, which subsequently led to cannabis use being prohibited in every state by 1937 (Gieringer et al., 2008; Mack & Joy, 2000; Marshall, 2005; Musto, 1999). Despite an increase in cannabis use in the 1960s, which was also a period of economic growth in the U.S. and the drug becoming a political issue, associated with anti-war protests, it remained legal under federal law until the CSA was created in 1970 (Musto, 1999). What then followed is an attempt by activists to portray the use of the drug as a medical necessity, starting with Robert Randall's use of the "medical defence to defend himself against cannabis charges (Gieringer et al., 2008), followed by the creation of the NORML organisation. One Group Two participant said:

“My impression is that the medical cannabis movement (i.e. smoked cannabis, not THC pills) is partly an effort to show that cannabis is a benign substance...” (G2-3, Illinois).

Since then the federal government has maintained that cannabis deserves its Schedule I classification, and that there is no evidence to show otherwise. However, there were shifts in 1978 when New Mexico became the first state to pass legislation recognising cannabis as a medicine and subsequently 34 states had enacted legislation which allowed their health departments to conduct research on the effectiveness of cannabis as a medicine under the IND program (Koch, 1999; Werner, 2001). However, the IND program was terminated and has not been revived since. Despite the lobbying effort, it was not until 1996 that California became the first state to legalise the cultivation, possession and use of cannabis for medical purposes that the medical cannabis movement gained momentum and the public recognised the need for cannabis as a medicine (MPP, 2013; Zeese 1999).

Michigan and New Mexico’s medical cannabis laws came to pass following the first such law passed in California in 1996. States such as Michigan and New Mexico also had ineffective medical cannabis and therapeutic research laws from 1978 which they were trying to revive. Some medical cannabis laws are similar to that of California while there are also variations in the state laws. New Mexico’s law was the first in the country to specifically instruct the state to develop and implement a cannabis production and distribution system, in response to criticism of the California law which led to difficulties in medical cannabis production and distribution. In New Mexico, there were regular calls from the medical cannabis proponents and the Department of Health to model New Mexico’s medical cannabis program on Hawaii and Oregon’s, as they were

deemed to be the most effective. Due to the states being subjected to similar pressures and the expanding amount of information available, it can be said that policymakers are looking to other political systems for knowledge and ideas that they can apply to their jurisdictions, as was the case with New Mexico's legislature (Dolowitz & Marsh, 2000; Wolf, 2000). Wolf (2000) noted that there is no such thing as "best public administration" but there are instead good and better practices which need to be identified on the basis of national needs and the requirements for adaptation to the political and administrative context in which they are to be applied. While there are variations in state approaches to medical cannabis issues, policymakers should look to other states to determine those parts of medical cannabis laws that have proven to be effective, and apply it to their law. This will then, perhaps, lead to a more uniform approach to medical cannabis laws across the states. However, policy transfer is not an "all or nothing" process and the type of transfer likely to occur is subject to a number of factors such as the actors involved in the process, the resources and time available to them, and the nature of the problem they face (Dolowitz & Marsh, 2000).

Some may argue that it was not by coincidence that the first medical cannabis law was passed by the ballot initiative process. As Watts (2010) notes, the past two decades saw an increase in initiatives in the U.S. The initiative process is useful in cases where law makers are unwilling to enact or consider a law that the citizens want, and in the case of medical cannabis, after the attempts to reschedule cannabis since the CSA have failed, attention turned to state measures (Watts, 2010). As discussed in Chapter Two, the initiative process has largely become influenced by money and large interest groups, but ultimately must involve mass audiences in order to place an issue on the ballot and win on election day (Boehmke & Bowen, 2010; Braunstein, 2004; Magleby,

1998). The issue, however, is that the literature has found that voters often lack education and competence to make policy decisions which allows for the elites to influence voters' choice (Burnett & Parry, 2014; Matsusaka, 2005).

So if the voters are uninformed about public policy, politics and government, damaging policy may be adopted as a result. If the goal is to make more evidence-based policy, then it is important to consider, especially in states with the initiative process, the role science plays in informing the public and how scientific information can be made more accessible to them. This view is also supported by Sabatier (1988) who encouraged policy debates in order for policymakers to broaden their perspectives beyond the ideological concerns and self-interest. Sabatier (1988) said that exposure to competing views and justifying one's position in a public forum would lead to a more thought out policy. Therefore, as suggested by Majone (1979) steps need to be taken encourage conflict about the evidence and a process where alternatives are encouraged, particularly when the evidence is mixed. As Majone (1979) concluded:

By ensuring the representation of conflicting opinions and the examination of a wide range of alternatives, well-designed procedures can greatly improve not only the rationality but also the legitimacy of regulatory decisions. (p. 580).

The results from the group studies discussed in Chapters Five and Six indicate the participants' beliefs that scientific evidence enters the debate more when the medical cannabis laws are passed by the legislature than by the initiative process. The participants also noted a difference in the factors influencing the debate at the legislative and initiative level. They can also lead to different outcomes and improvements upon

the laws in other states, such as New Mexico's law being the first in the country to specifically instruct the state to develop and implement a cannabis production and distribution system, in order to assist patients in obtaining the drug (Lynn and Erin Compassionate Use Act, 2007; MPP, 2013). Based on the findings in this study, a better way of approaching medical cannabis policy may be to move the debate to the legislature. There has already been an increase in states passing medical cannabis laws through the legislative process, and this may be the way to go in order to increase the use of science in the medical cannabis policy field (MPP, 2013). After all, government elites tend to be more reflective of their constituents' views because of their greater electoral accountability and exposure to opponents' views, whereas interest groups, who largely influence the initiative process, tend to be more extreme in their views than their constituents (Sabatier, 1988).

Conclusion

This thesis looked at the medical cannabis process in five representative U.S. states and sought to identify the role of scientific evidence in the medical cannabis policy process and other factors of influence. It provided an in-depth view of the medical cannabis process in five representative states, and individual experiences of the medical cannabis policy process through the eyes of those who were directly involved in it. It also examined the process from the views of those not directly involved in the process but conducting research in the alcohol and other drug field, and those individuals who have expertise in drug policy research. This thesis also drew attention to areas that need to be addressed by future research, such as the limitations of the currently available scientific evidence, the need for further studies, and increasing the role of scientific evidence in what is essentially a medical field.

The study found that, despite the expectation that the same rules would apply to cannabis as other medicine, the medical cannabis process appears to be less medically and more politically driven, and scientific evidence tends to fall behind in its level of influence. Factors such as political ideology, the initiative process in some states, political timing, and interest groups tend to play a role in the process and more so than scientific evidence. While this study recommended more research into cannabis as a medicine, it is recognised that this is made difficult by cannabis being placed in Schedule I of the Controlled Substances Act. Cannabis' rescheduling would potentially lead to more studies, especially long-term studies which are lacking. However, it is unlikely that cannabis will be rescheduled in the near future, so the attention needs to be turned to how the evidence can be used to assure that effective medical cannabis laws are passed and that there is a more uniform approach across the states passing such laws. There are also opportunities to improve the laws and how they are implemented, through taking a more evidence-based approach. This study suggests that the first step to doing this is for the debate to shift to the legislative process and for more systematic effort being dedicated to educating the public and the policymakers. A collaborative approach between researchers and policymakers is also recommended.

Although a controversial issue and still in the early stages of scientific exploration, the topic of cannabis and its role as a medicine is nonetheless an important one. It is an issue which should be further explored on both an individual and political level, in order to develop successful laws which would benefit society and increase knowledge of what it takes to create an effective law. It should also be questioned why, if cannabis is a medicine, it is not treated as such, and what could be done to enable its treatment as a medicine, such as undergoing the FDA approval process, giving

physicians the ability to prescribe it, and controlling it in the same way other medicines are controlled.

It is hoped that this thesis will be viewed as an observation of the medical cannabis process, not only from the researcher's point of view but from the views of those who participated in the process, researched the process, or observed the changes in medical cannabis laws over the years. It is anticipated that, by reporting the results of this research, the main factors influencing the policy formation process can be identified and that information used by researchers and those involved in the policy process as a guide to improving the role of evidence in the medical cannabis movement. Ideally, scientific evidence would be incorporated into all levels of policy decision-making and the researchers would work collaboratively with policymakers to provide the knowledge that is needed by the policymakers, while not losing sight of the best evidence.

References

- 60 Minutes to air Johnson drug views. (2000, April 23). *Albuquerque Journal*.
Retrieved from <http://www.abqjournal.com>
- A talk with drug czar on uses of marijuana. (2004, December 8). *Detroit Free Press*.
Retrieved from <http://www.mpp.org/states/michigan/news/a-talk-with-a-drug-czar-on-uses.html>
- Abrams, D. I., Hilton, J. F., Leiser, R., Shade, S. B., Elbeik, T. A., Aweeka, F. T., et al. (2003). Short-term effects of cannabinoids in patients with HIV-1 infection. A randomized, placebo-controlled clinical trial. *Annals of Internal Medicine*, 139, 258-266.
- Abrams, D. I., Jay, C. A., Shade, S. B., Vizoso, H., Reda, H., Press, S., et al. (2007). Cannabis in painful HIV-associated sensory neuropathy: A randomized placebo-controlled trial. *Neurology*, 68, 515-521.
- Activists promote legalized marijuana, other initiatives in petitions. (1999, December 21). *Associated Press*. Retrieved from <http://www.mapinc.org/drugnews>
- Adkins, M. (2004, December 2). Use of marijuana for medicinal purposes. *The Trail Blazer*. Retrieved from <http://www.mapinc.org/media/3599>
- Administrative Office of the U.S. Courts, Office of Judges Programs. (2003). *Understanding the federal courts*. Washington, DC: Administrative Office of the U.S. Courts.
- Aisner, A. (2006, November 29). Lawmakers hear marijuana touted for medical use. *The Ann Arbor News*. Retrieved from <http://www.mlive.com/aanews/index.ssf>

Alba, D. M. (2007a, March 10). Medical marijuana bill fails in House, *Farmington*

Daily News. Retrieved from <http://www.mapinc.org/media/951>

Alba, D. M. (2007b, March 14). House approves use of medical marijuana. *Las Cruces*

Sun-News. Retrieved from <http://www.lcsun-news.com>

Albright, M. (2009, April 20). Nietzsche is dead: Sorry, students [Opinion editorial].

Daily Reveille. Retrieved from <http://www.mapinc.org/media/2879>

Alexander, C., & Broussard, Z. (2006, April 20). A tokin' holiday. *LSU Reveille*.

Retrieved from <http://www.mapinc.org/media/2879>

Alford, J. A. (2003, November 4). Pot and politics. *Gambit Weekly*. Retrieved from

<http://www.mapinc.org/media/2406>

Alliance for Cannabis Therapeutics. (1999). Legislative tallies for state statutes

recognizing marijuana's medical value. Retrieved from <http://www.marijuana-as-medicine.org/Alliance/leg-tall.html>

Alternative Treatment Act, H.R. 5938, 2007-2008 Legis. Sess. (Ill. 2008).

American College of Physicians. (2008). *Supporting research into the therapeutic role*

of marijuana: A position paper of the American College of Physicians.

Philadelphia, PA: Author.

American Medical Association. (2009). *Report 3 of the Council on Science and Public*

Health (I-09) Use of Cannabis for Medicinal Purposes (Resolutions 910, I-08; and 229, A-09). Retrieved from American Medical Association website:

<http://www.ama-assn.org/resources/doc/csaph/csaph-report3-i09.pdf>

Americans for Safe Access v. DEA, 706 F.3d 438. (2013).

- Andersen, S. (2005, March 18). Agonizing wait over legalizing marijuana. *The Albuquerque Tribune* Retrieved from <http://cannabisnews.com/news/20/thread20375.shtml>
- Anderson, J. E. (2003). *Public policymaking: An introduction*. Boston: Houghton Mifflin.
- Andrews, C. (2006, November 29). Marijuana bill snuffed out. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>
- Andrews, C. (2007a, June 6). Marijuana petitions are ready for review. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>
- Andrews, C. (2007b, December 19). Marijuana as medicine? *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>
- Angel, C. (2004, February 27). Sides prepare fight over medical marijuana bill. *Detroit Free Press*. Retrieved from <http://www.freep.com/>
- Anti-marijuana laws need relaxation. (2008, February 28). *Daily Reveille*. Retrieved from <http://www.mapinc.org/media/2879>
- Armijo Olivo, S., Macedo, L. G., Gadotti, I. C., Fuentes, J., Stanton, T., & Magee, D. J. (2008). Scales to assess the quality of randomized controlled trials: A systematic review. *Physical Therapy*, 88(2), 156-175.
- Arnon, H. (2008). *A theory of direct legislation*. New York: LFB Scholarly Publishing LLC.
- Babcock, R. S. (1965). State government in the United States. In S. K. Bailey (Ed.), *American politics and government* (pp. 203-217). Washington, DC: Voice of America, Forum Lectures.

- Bacchi, C. L. (2009). *Analysing policy: What's the problem represented to be?*. Frenchs Forest, N.S.W: Pearson Education.
- Bacon, B. (2007, July 5). New Mexico's pot connection. *ABC News*. Retrieved from <http://www.abcnews.go.com>
- Baker, D. (2005, March 2). Medical marijuana passes Senate. *Albuquerque Journal*. Retrieved from <http://cannabisnews.com/news/20/thread20307.shtml>
- Baker, D. (2006, January 24). Senate panel OK's medical marijuana bill. *Associated Press*. Retrieved from <http://cannabisnews.com/news/21/thread21514.shtml>
- Baker, D. (2007a, March 10). Medical-marijuana bill not dead yet. *The New Mexican*. Retrieved from <http://www.freewmexican.com>
- Baker, D. (2007b, March 15). Richardson to legalize medical marijuana. *Associated Press*. Retrieved from <http://cannabisnews.com/news/22/thread22755.shtml>
- Baker, D. (2007c, April 3). Medical marijuana bill signed into law. *Albuquerque Journal*. Retrieved from <http://www.mapinc.org/media/10>
- Baker, D. (2007d, June 30). Law requires N.M. to grow its own pot. *Associated Press*. Retrieved from <http://cannabisnews.com/news/23/thread23140.shtml>
- Baker, D. (2007e, August 11). State workers could face charges for marijuana law. *The New Mexican*. Retrieved from <http://www.freewmexican.com>
- Barker, R. S. (2005, April). "I do solemnly swear". *Issues of Democracy*. Retrieved from eJournal USA website <http://www.america.gov/media/pdf/ejs/0405.pdf>
- Baker, D., Pryce, G., Giovannoni, G., & Thompson, A. J. (2003). The therapeutic potential of cannabis. *Lancet Neurology*, 2(5), 291-298. doi: 10.1016/S1474-4422(03)00381-8

- Beam, T. (2006, September 3). Medical field against legalized marijuana [Published letter]. *Central Kentucky News Journal*. Retrieved from <http://www.cknj.com>
- Beaulieu, P. (2006). Effects of nabilone, a synthetic cannabinoid, on postoperative pain. *Canadian Journal of Anesthesia*, 53(8), 769-775.
- Behavioral Health Services Division. (1983). *The Lynn Pierson Therapeutic Research Program: A report on progress to date*. Retrieved from <http://medicalmarijuana.procon.org/sourcefiles/new-mexico-progress-report-1983.pdf>
- Bell, D. (2006, November 28). Federal official urges state to keep pot use illegal. *Detroit Free Press*. Retrieved from <http://safeaccessnow.org/article.php?id=3898>
- Bell, D. (2008a, March 4). Medical pot proposal on its way to Michigan's November ballot. *Lansing State Journal*. Retrieved from <http://lansingstatejournal.com>
- Bell, D. (2008b, October 14). Anti-drug group joins fight against medical marijuana. *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Bell, D. (2008c, November 1). Move to legalize medical marijuana supported by 2-1 margin. *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Ben Amar, M. (2006). Cannabinoids in medicine: a review of their therapeutic potential. *Journal of Ethnopharmacology*, 105, 1-25.
- Berman, J. S., Symonds, C., & Birch, R. (2004). Efficacy of two cannabis based medicinal extracts for relief of central neuropathic pain from brachial plexus avulsion: results of a randomised controlled trial. *Pain*, 112, 299-306.
- Bertram, E., Blachman, M., Sharpe, K., & Andreas, P. (1996). *Drug war politics: The price of denial*. Berkeley: University of California Press.

- Birkland, T. A. (2005). *An introduction to the policy process* (2nd ed.). Armonk, NY: M.E. Sharpe.
- Black, N. (2001). Evidence based policy: proceed with care. *BMJ*, 323, 275-279.
- Blackford, L. B. (2012, January 04). Iconic Kentucky political figure Gatewood Galbraith. *Lexington Herald-Leader*. Retrieved from <http://www.mapinc.org/drugnews/v12/n012/a08.html?1289>
- Blake, D. R., Robson, P., Ho, M., Jubb, R. W., & McCabe, C. S. (2006). Preliminary assessment of the efficacy, tolerability and safety of a cannabis-based medicine (Sativex) in the treatment of pain caused by rheumatoid arthritis. *Rheumatology*, 45(1), 50-52.
- Boehmke, F. J. (2002). The Effect of Direct Democracy on the Size and Diversity of State Interest Group Populations. *The Journal of Politics*, 64(3), 827-844. doi: 10.1111/0022-3816.00148
- Boehmke, F. J. (2005). Sources of Variation in the Frequency of Statewide Initiatives: The Role of Interest Group Populations. *Political Research Quarterly*, 58(4), 565-575. doi: 10.1177/106591290505800404
- Boehmke, F. J. (2008). The Initiative Process and the Dynamics of State Interest Group Populations. *State Politics & Policy Quarterly*, 8(4), 362-383. doi: 10.1177/153244000800800402
- Boehmke, F. J., & Alvarez, R. M. (2014). The Influence of Initiative Signature-Gathering Campaigns on Political Participation. *Social Science Quarterly*, 95(1), 165-183. doi: 10.1111/ssqu.12053

- Boehmke, F. J., & Bowen, D. C. (2010). Direct Democracy and Individual Interest Group Membership. *The Journal of Politics*, 72(3), 659-671. doi: 10.1017/S0022381610000083
- Bonner, C. (2009, April 3). Politicians, doctors conflicted over medical marijuana. *Courier News*. Retrieved from <http://www.mapinc.org/media/1200>
- Bonnie, R. J. (2001). Marihuana Commission: Recommendations On Decriminalization. In R. Carson-DeWitt (Ed.), *Encyclopedia of Drugs, Alcohol & Addictive Behavior* (2nd ed. ed., Vol. 2, pp. 700-702). New York: Macmillan Reference USA.
- Bove, K. (2009, April 20). Marijuana arrests on campus continue to rise. *Daily Reveille*. Retrieved from <http://www.mapinc.org/media/2879>
- Bowen, J. A. (2005, February 9). Former federal drug policy official warns of marijuana dangers. *Belleville News-Democrat*. Retrieved from <http://www.mapinc.org/newscsdp/v05/n236/a07.html>
- Bowler, S., & Donovan, T. (2004). Measuring the Effect of Direct Democracy on State Policy: Not All Initiatives Are Created Equal. *State Politics & Policy Quarterly*, 4(3), 345-363. doi: 10.1177/153244000400400305
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Braunstein, R. (2004). *Initiative and referendum voting: Governing through direct democracy in the United States*. New York, NY: LFB Scholarly Publishing LLC.
- Britannica Educational Publishing. (2010). *The Executive Branch of the federal government: Purpose, process, and people*. Retrieved from

<http://www.ebooks.com/474429/the-legislative-branch-of-the-federal-government/britannica-educational-publishing-duignan-brian-ed>

Brockman, C. (2011, February 03). Campus group continues push for marijuana legalization. *The Eastern Progress*. Retrieved from <http://www.mapinc.org/drugnews/v11/n073/a03.html?1298>

Brown, J. (2006, September 19). Nelson's drug bust national news story. *The Advertiser*. Retrieved from <http://www.theadvertiser.com>

Brownfield, A. (2011a, May 01). Medical marijuana legalization getting new life at statehouse. *State Journal-Register*. Retrieved from <http://www.mapinc.org/drugnews/v11/n278/a07.html?2222>

Brownfield, A. (2011b, May 06). Medical marijuana fails again in Illinois House. *State Journal-Register*. Retrieved from <http://www.mapinc.org/drugnews/v11/n286/a05.html?2222>

Brownson, R. C., Baker, E. A., Left, T. L., Gillespie, K. N., & True, W. R. (2011). *Evidence-based public health*. Oxford: Oxford University Press.

Brownson, R. C., Chiqui, J. F., & Stamatakis, K. A. (2009). Understanding evidence-based public health policy. *American Journal of Public Health*, 99(9), 1576-1583. doi:10.2105/AJPH.2008.156224

Brumble, M. (2009, October 18). Medical marijuana legislation growing throughout country. *Shreveport Times*. Retrieved from <http://www.shreveporttimes.com>

Bukowski, A. (2010, August 17). TC Approves marijuana regulations. *Traverse City Record-Eagle*. Retrieved from <http://www.mapinc.org/drugnews/v10/n666/a08.html?1522>

- Burch, S. (1999). Evaluating health interventions for older people. *Health*, 3(2), 151-166. doi:10.1177/136345939900300202
- Burges, R. (2007, April 25). Music legend fined in marijuana case. *The Advocate*. Retrieved from <http://www.theadvocate.com>
- Burnett, C. M., & Parry, J. A. (2014). Gubernatorial Endorsements and Ballot Measure Approval. *State Politics & Policy Quarterly*, 14(2), 178-195. doi: 10.1177/1532440014529290
- Buzz over medical marijuana. (2005, June 15). *Metro Times*. Retrieved from <http://www.mpp.org/states/michigan/news/buzz-over-medical-marijuana.html>
- Cain, C. (1997, November 6). Medical use of marijuana goes on trial in Michigan. *The Detroit News*. Retrieved from <http://detnews.com>
- Cain, C. (2006, November 29). Medical marijuana bill dies. *The Detroit News*. Retrieved from <http://detnews.com>
- Campbell, F. A., Tramèr, M. R., Carroll, D., Reynolds, D. J. M., Moore, R. A., & McQuay, H. J. (2001). Are Cannabinoids An Effective And Safe Treatment Option In The Management Of Pain? A Qualitative Systematic Review. *BMJ: British Medical Journal*, 323(7303), 13-16. doi: 10.1136/bmj.323.7303.13
- Campo, C. (2008, June 26). Marijuana defendant vows to fight drug charges. *The Courier*. Retrieved from <http://www.mapinc.org/media/1477>
- Cannabis Control Act, 720 ILCS 550 (2005).
- Cannabis laws in Ann Arbor, Michigan (n.d.). In *Wikipedia*. Retrieved March 29, 2015, from http://en.wikipedia.org/wiki/Cannabis_laws_in_Ann_Arbor,_Michigan

Carroll, C. B., Bain, P. G., Teare, B. M., Liu, X., Joint, C., Wroath, C., et al. (2004).

Cannabis for dyskinesia in Parkinson disease. A randomized double-blind crossover study. *Neurology*, 63, 1245-1250.

Caulkins, J. P. (2012). *Marijuana legalization: What everyone needs to know*. New York: Oxford University Press.

Center for Medicinal Cannabis Research. (2010). *Report to the Legislature and Governor of the State of California presenting findings pursuant to SB847 which created the CMCR and provided state funding*. Retrieved from Retrieved from University of California, Center for Medicinal Cannabis Research website: http://www.cmcrc.ucsd.edu/images/pdfs/CMCR_REPORT_FEB17.pdf

Chang, A. E., Shilling, D. J., Stillman, R. C., Goldberg, N. H., Seipp, C. A., Barofsky, I., et al. (1981). A prospective evaluation of delta-9-tetrahydrocannabinol as an antiemetic in patients receiving adriamycin and cytoxan chemotherapy. *Cancer*, 47(7), 1746-1751.

Chang, A. E., Shilling, D. J., Stillman, R. C., Goldberg, N. H., Seipp, C. A., Barofsky, I., et al. (1979). Delta-9-tetrahydrocannabinol as an antiemetic in cancer patients receiving high-dose methotrexate: a prospective, randomized evaluation. *Annals of Internal Medicine*, 91, 819-824.

Charter for the City of Ann Arbor, Michigan of 1956 ss 17 (1956).

Choi, B. C. K., Morrison, H., Clotey, C., Pang, T., Lin, V., Puska, P., . . . Stachenko, S. (2005). Can scientists and policy makers work together? *Journal of Epidemiology and Community Health* (1979-), 59(8), 632-637.
doi:10.1136/jech.2004.031765

- Ciccone, R. F. (1978, June 28). Facing Death, *The Evening Independent*. Retrieved from <http://news.google.com/newspapers?id=ceULAAAAIIBAJ&sjid=oVgDAAAAIIBAJ&pg=6512,2853137&dq=illinois+medical+marijuana+timeline&hl=en>
- Citizens Protecting Michigan's Kids. (2008). *Vote no on proposal one*. Retrieved from <http://www.nopotshops.com>
- Citizens Research Council of Michigan (September 2008). *Proposal 2008-01: Medical Marijuana*. Retrieved from <http://www.crcmich.org/PUBLICAT/2000s/2008/rpt352.html>
- Clark, P. A. (2000). The ethics of medical marijuana: Government restrictions vs. medical necessity. *Journal of Public Health Policy*, 21, 40-60.
- Clarke, T. H. (2012, March 14). Kentucky medical marijuana bill stalled in committee. *The Daily Chronic*. Retrieved from <http://www.thedailychronic.net/>
- Coates, R. (2008, October 22). Medical marijuana. *Northern Express*. Retrieved from <http://www.northernexpress.com>
- Cohen, P. J. (2006). Medical marijuana, compassionate use, and public policy: Expert opinion or vox populi? *The Hastings Center Report*, 36(3), 19-22.
- Cohen, P. J. (2009). Medical marijuana: the conflict between scientific evidence and political ideology. *Utah Law Review*, 2009(1), 35.
- Cohen, P. J. (2010). Medical marijuana 2010: it's time to fix the regulatory vacuum. *The Journal of Law, Medicine & Ethics*, 38(3), 654-666. doi: 10.1111/j.1748-720X.2010.00519.x
- Coleman, M. (2001, April 20). Gov. preaches to choir on drug reform. *Albuquerque Journal*. Retrieved from www.cannabisnews.com/news/thread9424.shtml

Colindres, A. (2009, February 17). Medical marijuana back up for debate in Senate.

Galesburg Register-Mail. Retrieved from <http://www.mapinc.org/media/3864>

Collin, C., Davies, P., Mutiboko, I. K., Ratcliffe, S., & Sativex Spasticity in MS Study Group. (2007). Randomized controlled trial of cannabis-based medicine in spasticity caused by multiple sclerosis. *European Journal of Neurology*, 14(3), 290-296. doi:10.1111/j.1468-1331.2006.01639.x

Compassionate Use Medical Cannabis Act, S.B. 008, 45th Leg. 2nd Sess. (N.M. 2002).

Compassionate Use of Medical Cannabis Pilot Program Act, S.B. 1381, 2009-2010 Legis. Sess. (Ill. 2009a).

Compassionate Use of Medical Cannabis Pilot Program Act, H.R. 2514, 2009-2010 Legis. Sess. (Ill. 2009b).

Conte, A., Marini Bettolo, C., Onesti, E., Frasca, V., Iacovelli, E., Gilio, F., et al. (2009). Cannabinoid-induced effects on the nociceptive system: A neurophysiological study in patients with secondary progressive multiple sclerosis. *European Journal of Pain*, 13, 472-477.

Controlled Substances Act, 98 Stat. 2071, 21 U.S.C. (1970).

Coover, E. (2009, March 3). Marijuana debate comes to campus for the first time.

Kentucky Kernel. Retrieved from <http://www.kykernel.com>

Corbetta, P. (2003). *Social research: Theory, methods and techniques*. London, England: SAGE.

Cotter, J. (2009). Efficacy of Crude Marijuana and Synthetic Delta-9-Tetrahydrocannabinol as Treatment for Chemotherapy-Induced Nausea and Vomiting: A Systematic Literature Review. *Oncology Nursing Forum*, 36(3), 345-352. doi: 10.1188/09.ONF.345-352

- Covington, O. (2005, June 27). Police still trying to weed out pot. *Messenger-Inquirer*. Retrieved from <http://www.messenger-inquirer.com>
- Crimmins, C. (2001, February 15). Medicinal marijuana unlikely in Michigan. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com/>
- Cunha, J. M., Carlini, E. A., Pereira, A. E., Ramos, O. L., Pimentel, C., Gagliardi, R., et al. (1980). Chronic administration of cannabidiol to healthy volunteers and epileptic patients. *Pharmacology*, 21, 175-185.
- 'Cures, not wars', chant supporters of legalizing. (2004, May 2). *Lexington Herald-Leader*. Retrieved from <http://www.kentucky.com/mld/heraldleader>
- Cushman, C. B. (2005). *Introduction to the U.S. Congress*. Armonk, NY: M.E. Sharpe, Inc.
- Czarnik, E. (2007, June 20). Activists petition for medical marijuana in Michigan. *City Pulse*. Retrieved from <http://www.lansingcitypulse.com>
- D'Souza, D. C., Abi-Saab, W. M., Madonick, S., Forselius-Bielen, K., Doersch, A., Braley, G., et al. (2005). Delta-9-tetrahydrocannabinol effects in schizophrenia: implications for cognition, psychosis, and addiction. *Biological Psychiatry*, 57(6), 594-608.
- Daley: Just ticket marijuana use. (2004, September 21). *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- Davies, H. T. O., Nutley, S. M., & Smith, P. C. P. (2000). *What works?: Evidence-based policy and practice in public services*. Bristol: The Policy Press.
- Davis, T. (2004, November 4). Medical marijuana vote called invalid. *The Ann Arbor News*. Retrieved from <http://www.mlive.com/aanews.index.ssf>

- Davoudi, S. (2006). Evidence-based planning: Rhetoric and reality. *DISP*, 165(2), 14-24.
- Degenhardt, L., & Hall, W. (2008). The adverse effects of cannabinoids: implications for use of medical marijuana. *CMAJ : Canadian Medical Association Journal*, 178(13), 1685-1686. doi: 10.1503/cmaj.080585
- Degenhardt, L., Hall, W., & Lynskey, M. (2003). Exploring the association between cannabis use and depression. *Addiction*, 98, 1493-1504.
- Del Mauro, D. (2007a, May 19). Volunteers lining up to grow medical marijuana. *The New Mexican*. Retrieved from <http://www.freewmexican.com>
- Del Mauro, D. (2007b, June 29). State to let patients grow their own pot. *The New Mexican*. Retrieved from <http://www.freewmexican.com>
- Del Mauro, D. (2007c, August 15). Legal fears hack away at state's pot plan. *The New Mexican*. Retrieved from <http://www.freewmexican.com>
- Del Mauro, D. (2007d, September 27). Hearing planned on medical marijuana. *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>
- Delaney, B. (2010a, April 1). Medical cannabis: Legal in Louisiana since 1978! [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog/41-medical-cannabis-legal-in-louisiana-since-1978>
- Delaney, B. (2010b, April 7). Letters to the Editor [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog/50-letters-to-the-editor>
- Delaney, B. (2010c, May 27). Louisiana physicians need an education! [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog/56-louisiana-physicians-need-an-education>

- Delaney, B. (2010d, June 27). Another successful medical cannabis rally! [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog/59-another-successful-medical-cannabis-rally>
- Delaney, B. (2010e, July 5). Our mission statement [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog>
- Delaney, B. (2010f, August 25). Bluegoose music festival [Web log comment]. Retrieved from <http://normllouisiana.org/index.php/blog/66-bluegoose-music-festival>
- Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, H.R. 2799, 108th Cong. (2004).
- Deputy drug czar will blast marijuana issue in Grand Rapids stop Monday. (2008, October 13). *Grand Rapids Press*. Retrieved from <http://www.mlive.com/grpress>
- Detroit okays medical use of marijuana. (2004, August 4). *The Detroit News*. Retrieved from <http://www.mpp.org/states/michigan/news/detroit-oks-medical-use-of-marij.html>
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314-321. doi:10.1111/j.1365-2929.2006.02418.x
- Dinan, J., & Krane, D. (2006). The state of American Federalism, 2005: Federalism resurfaces in the political debate. *Publius*, 36(3), 327-374. doi:10.1093/publius/pjj028
- Dolowitz, D. P., & Marsh, D. (2000). Learning from abroad: The role of policy transfer in contemporary Policy-Making. *Governance*, 13(1), 5-23. doi:10.1111/0952-1895.00121

Donsbach, W., & Traugott, M. W. (2008). *The SAGE Handbook of Public Opinion Research*. London: Sage Publications Ltd.

Doty, A. (2008, April 3). Marijuana could be on state's November ballot. *Sentinel-Standard*. Retrieved from <http://www.sentinel-standard.com>

Doughty, M. (2012, May 10). Activists plan to protest pot prohibition. *The Times*. Retrieved from <http://www.mapinc.org/drugnews/v12/n270/a02.html?1970>

Drake, F. D., & Nelson, L. R. (1999). *States' rights and american federalism: A documentary history*. Westport, Conn: Greenwood Press.

Draper, M. (2006, September 11). Pay attention to scripture [Published letter]. *Central Kentucky News Journal*. Retrieved from <http://www.cknj.com>

Druckman, J. N. (2001). The Implications of Framing Effects for Citizen Competence. *Political Behavior*, 23(3), 225-256. doi: 10.1023/A:1015006907312

Drug czar visits Michigan, says medical marijuana is bad medicine. (2008, October 16). *Associated Press*. Retrieved from http://blog.mlive.com/chronicle/2008/10/drug_czar_visits_michigan_says.html

Drug debate fizzled in inane sound-bites [Editorial]. (1999, October 10). *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-537617_ITM

Drug Enforcement Administration. (n.d.). *Affidavit of Roger D. Winthrop in the matter of marijuana rescheduling petition*. Retrieved from http://www.minorml.org/mich_mj_med_act_1979.html

Drug Policy Alliance. (2007, February 21). *New Mexico medical marijuana bill stopped in House*. Retrieved from <http://www.drugpolicy.org/news/022106nmhouse.cfm>

- Duran, M., Perez, E., Abanades, S., Vidal, X., Saura, C., Majem, M., et al. (2010). Preliminary efficacy and safety of an oromucosal standardized cannabis extract in chemotherapy-induced nausea and vomiting. *British Journal of Clinical Pharmacology*, 70(5), 656-663. doi:10.1111/j.1365-2125.2010.03743.x
- Duvernay, A. (2011, March 04). Protesters rally for legalizing marijuana. *The Times*. Retrieved from <http://www.mapinc.org/drugnews/v11/n150/a09.html?1970>
- Earleywine, M. (2002). *Understanding marijuana: a new look at the scientific evidence*. New York: Oxford University Press.
- Eddy, M. (2010). *CRS Report for Congress: Medical Marijuana: Review and analysis of federal and state policies*. Retrieved from Congressional Research Service website: <http://fas.org/sgp/crs/misc/RL33211.pdf>
- Egglar, B. (2010, December 18). New Orleans city council reclassifies pot possession, prostitution to reduce criminal dockets. *The Times-Picayune*. Retrieved from <http://www.nola.com/t-p/>
- Ellett, M. L. C., & Beausang, C. C. (2002). Introduction to qualitative research. *Gastroenterology nursing : the official journal of the Society of Gastroenterology Nurses and Associates*, 25(1), 10-14.
- Ellis, R. J., Toperoff, W., Vaida, F., Van der Brande, G., Gonzales, J., Gouaux, B., et al. (2008). Smoked medicinal cannabis for neuropathic pain in HIV: a randomized, crossover clinical trial. *Neuropsychopharmacology*, 34, 672-680.
- Ending Federal Marijuana Prohibition Act, H.R. 2306, 112th Cong. (2011).
- Ending Federal Marijuana Prohibition Act 2013, H.R. 499, 113th Cong. (2013).
- English, R. (2003). *The United States Congress*. Manchester, GBR: Manchester University Press.

- Estep, B. (2006, November 25). After 20 years, war on marijuana changes. *Lexington Herald-Leader*. Retrieved from <http://www.kentucky.com/mld/heraldleader>
- Farmanfarmaian, R. (1998). DEA raids Prelude Press over pot book. *Publishers Weekly*, 245(3), 235.
- Fecteau, L. (2000a, April 13). Johnson cuts drug censorship. *Albuquerque Journal*. Retrieved from <http://www.abqjournal.com>
- Fecteau, L. (2000b, April 25). Johnson backs off on drugs. *Albuquerque Journal*. Retrieved from <http://cannabisnews.com/news/5/thread5504.shtml>
- Fecteau, L. (2000c, July 25). Updated pot law backed. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-2524036_ITM
- Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 321 et. seq. (2000).
- Ferraiolo, K. (2008). State Policy Innovation and the Federalism Implications of Direct Democracy. *Publius*, 38(3), 488-514. doi: 10.1093/publius/pjm039
- Fishman, S. J. (2008, October 7). Will Michigan workplaces go a pot? [Memorandum]. Retrieved from <http://www.ctvmichigan.org/marijuana/employer-memo.pdf>
- Flesher, J. (2005, November 10). Traverse City, Ferndale approve medical marijuana use. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com/>
- Flint legalizes medical marijuana. (2007, February 28). *Battle Creek Enquirer*. Retrieved from <http://www.mpp.org/states/michigan/news/flint-legalizes-medical-marijuan.html>
- Fraser, R. (2009, May 8). La. Gets green light on medical-marijuana decision. *Houma Today*. Retrieved from <http://www.houmatoday.com>
- Freeman, E., Jr. (2009, April 19). Freeman of speech: Prohibition didn't work. *Daily Reveille*. Retrieved from <http://www.mapinc.org/media/2879>

- Frick Carlman, S. (2010, January 05). RX pot has friends, foes in gubernatorial race. *Naperville Sun*. Retrieved from <http://www.mapinc.org/drugnews/v10/n017/a02.html?2223>
- Frytak, S., Moertel, C. G., O'Fallon, J. R., Rubin, J., Creagah, E. T., O'Connell, M. J., et al. (1979). Delta-9-tetrahydrocannabinol as an antiemetic for patients receiving cancer chemotherapy. *Annals of Internal Medicine*, 91, 825-830.
- Galbraith, G. (2004, August 1). The long and varied history of marijuana [Book review]. *Lexington Herald-Leader*. Retrieved from <http://www.kentucky.com/mld/heraldleader>
- Galea, S., & Tracy, M. (2007). Participation rates in epidemiologic studies. *Ann Epidemiol*, 17(9), 643-653.
- Gallegos, G. (2007, August 17). Governor Bill Richardson urges Bush administration to end heartless medical marijuana policy [Press release]. New Mexico: Governor Bill Richardson.
- Gantert, T. (2004, September 8). Governor casts doubt on marijuana ballot issue. *The Ann Arbor News*. Retrieved from <http://www.mlive.com/aanews/index.ssf>
- Gerstl-Pepin, C. I. (2007). Introduction to the social issue on the media, democracy, and the politics of education. *Peabody Journal of Education*, 82(1), 1-9. doi: 10.1080/01619560709336534
- Gerth, J. (2012, January 05). Perennial candidate Gatewood Galbraith dies. *The Courier-Journal*. Retrieved from <http://www.mapinc.org/drugnews/v12/n012/a03.html?1298>
- Gibson, J. (1999). Political timing: A theory of politicians' timing of events. *Journal of Theoretical Politics*, 11, 471-496. doi: 10.1177/0951692899011004002

- Gieringer, D., Rosenthal, E., & Carter, G. T. (2008). *Marijuana Medical Handbook : Practical Guide to Therapeutic Uses of Marijuana*. California: Quick American Archives.
- Given, L. M. (Ed.). (2008). *The SAGE encyclopedia of qualitative research methods*. Thousand Oaks, CA: SAGE.
- Givens, R. (2006, September 20). ‘Good book’ hemp lesson [Published letter]. *Central Kentucky News Journal*. Retrieved from <http://www.cknj.com>
- Glogowska, M., Young, P., & Lockyer, L. (2011). Propriety, process and purpose: considerations of the use of the telephone interview method in an educational research study. *High Educ*, 62, 17-26. doi: 10.1007/s10734-010-9362-2
- Gonzales v. Raich, 545 U.S. 1, 17 (2005).
- Gorman, M. (2011, August 26). Rethinking this nonsense [Column]. *The Courier*. Retrieved from <http://www.houmatoday.com/>
- Goze, K. (2004, November 4). Area police use local laws in marijuana cases. *Winnetka Talk*. Retrieved from <http://www.mapinc.org/media/3579>
- Green, J. (2000). The role of theory in evidence-based health promotion practice. *Health Education Research*, 15(2), 125-129. doi:10.1093/her/15.2.125
- Griffith, L. (2009a, March 30). Medical marijuana bill advancing in Senate, *The Alton Telegraph*. Retrieved from <http://www.mapinc.org/media/1207>
- Griffith, L. (2009b, April 30). Medical marijuana debate heats up. *Alton Telegraph*. Retrieved from <http://www.mapinc.org/media/1207>
- Griffith, L. (2009c, May 31). Sides split over medical marijuana bill, *The Alton Telegraph*. Retrieved from <http://www.thetelegraph.com>

- Griffy, L. (2004, March 3). Marijuana bill set aside before it gets a hearing, *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- Grinspoon, L. (2000). Whither medical marijuana? *Contemporary Drug Problems*, 27, 3-15.
- Grodzins, M. (1960). American political parties and the American system. *The Western Political Quarterly*, 13(4), 974-998. Retrieved from <http://www.jstor.org/stable/443741>
- Grossmann, M. (2012). Interest group influence on US policy change: An assessment based on policy history. *Interest Groups & Advocacy*, 1, 171-192. doi: 10.1057/iga.2012.9
- Grotenhermen, F. (2001). Harm reduction associated with inhalation and oral administration of cannabis and THC. *Journal of Cannabis Therapeutics*, 1, 133-152.
- Guyette, C. (2007, June 13). Drive under was to make medical marijuana legal in Michigan. *Metro Times*. Retrieved from <http://www.mapinc.org/norml/v07/n712/109.html?61226>
- H.R. 431, 45th Leg. 1st Sess. (N.M. 2001).
- H.R. 4038, 2007-2008 Legis. Sess. (Mich. 2007).
- H.R. Doc. No. 108-93, 108th Cong., 1st Sess. (2003).
- H.R. Doc. No. 108-94, 108th Cong., 1st Sess. (2003).
- H.R. Rep. No. 5470 (2005).
- Hahn, A. (2005, February 10). Expert rails against medical marijuana. *Southern Illinoisan*. Retrieved from <http://www.mapinc.org/media/1430>

- Hall, W., & Degenhardt, L. (2003). Medical Marijuana Initiatives: Are They Justified? How Successful Are They Likely to Be? *CNS Drugs*, 17(10), 689-689. doi: 10.2165/00023210-200317100-00001
- Hall, W., & Degenhardt, L. (2009). Adverse health effects of non-medical cannabis use. *Lancet*, 374(9698), 1383-1391. doi: 10.1016/S0140-6736(09)61037-0
- Hamming-Green, R. (2010, July 26). Pot grower shortage forces patients to seek alternatives. *Daily Lobo*. Retrieved from <http://www.mapinc.org/drugnews/v10/n595/a04.html?1145>
- Haney, D. (2007, April 21). Marijuana law may aid violators. *Peoria Journal Star*. Retrieved from <http://www.mapinc.org/media/338>
- Hanney, S., Gonzalez-Block, M., Buxton, M., & Kogan, M. (2003). The utilisation of health research in policy-making: concepts, examples and methods of assessment. *Health Research Policy and Systems*, 1(1), 2.
- Harris, M. (2003, February 9). Could marijuana be legal in Illinois? *Conscious Choice*. Retrieved from <http://www.alternet.org/drugreporter/15146>
- Harris, R., & Tichenor, D. (2009). *A history of the U.S. political system: Ideas, interests, and institutions*. Santa Barbara: ABC-CLIO. Retrieved from ECU Library One Search database.
- Hastings, J., & Cann, D. (2014). Ballot Titles and Voter Decision Making on Ballot Questions. *State and Local Government Review*, 46(2), 118-127. doi: 10.1177/0160323X14535410
- Haywood, P. (2007, August 30). Medical marijuana: Montoya takes on new pot law. *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>

- Haywood, P. (2011, September 24). Despite praise as success, some say NM medical cannabis program needs work. *The New Mexican*. Retrieved from <http://www.mapinc.org/drugnews/v11/n596/a01.html?1147>
- Hazekamp, A., & Grotenhermen, F. (2010). Review on clinical studies with cannabis and cannabinoids 2005-2009. *Cannabinoids*, 5, 1-21.
- Headings, D., & Byam, A. (2008, October 26). Don't be fooled by "medical" marijuana [Letter]. *The Battle Creek Enquirer*. Retrieved from <http://www.battlecreekenquirer.com>
- Hess, H. (2011, January 07). Illinois legislature shoots down medical marijuana bill. *St. Louis Post-Dispatch*. Retrieved from <http://www.stltoday.com/>
- Hoffman, R. (2000, September 7). Judge's decision halts placement of marijuana initiative on ballot. *The Ann Arbor News*. Retrieved from <http://aa.mlive.com/>
- Hollister, L. E. (2001). Hemp. In R. Carson-DeWitt (Ed.), *Encyclopedia of Drugs, Alcohol & Addictive Behavior* (2nd ed., Vol. 2, pp. 593-594). New York, NY: Macmillan Reference USA.
- House of Lords. Select Committee on Science and Technology. (1998). *Cannabis: The Scientific and Medical Evidence*. Session 1997-98, 9th Report, Ss8.23 (iii) (1997-98 ed.). London, England: The Stationary Office, Parliament.
- Householder, M., & Martin, T. (2010, December 24). Michigan's medical marijuana law shrouded in haze. *The Daily Tribune*. Retrieved from <http://www.mapinc.org/drugnews/v10/n1055/a09.html?1512>
- Howard, A. E. D. (2005, April). "To say what the law is": The Supreme Court as arbiter of constitutionality. *Issues of Democracy*. Retrieved from eJournal USA website <http://www.america.gov/media/pdf/ejs/0405.pdf>

Howlett, M., McConnell, A., & Perl, A. (2013). *Reconciling streams and stages:*

Avoiding mixed metaphors in the characterization of policy processes. Paper presented at the 1st International Conference on Public Policy, Grenoble, France. <http://www.icpublicpolicy.org/IMG/pdf/panel84.1.s1.howlett.pdf>

Huchel, B. L. (2010, August 22). Some lawmakers on fence regarding medical

marijuana. *Commercial News*. Retrieved from <http://www.mapinc.org/drugnews/v10/n685/a07.html?2460>

Huffstutter, P. J. (2007, April 18). Clergy back medical marijuana in Illinois. *Los*

Angeles Times. Retrieved from <http://www.latimes.com>

Hurt, M. (2009, March 4). Speakers: Drug use about responsibility. *Kentucky Kernel*.

Retrieved from <http://www.kykernel.com/>

Illinois General Assembly. (n.d.-a). *Bill Status of HB0030*. Retrieved from

<http://www.ilga.gov/legislation/BillStatus.asp?DocNum=30&GAID=11&DocTypeID=HB&SessionID=84&GA=97>

Illinois General Assembly. (n.d.-b). *Bill Status of HB0407*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=0407&GAID=8&GA=94&DocTypeID=HB&LegID=14741&SessionID=50>

Illinois General Assembly. (n.d.-c). *Bill Status of HB2514*. Retrieved from

<http://www.ilga.gov/legislation/BillStatus.asp?DocNum=2514&GAID=10&DocTypeID=HB&SessionID=76>

Illinois General Assembly. (n.d.-d). *Bill Status of HB4868*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=4868&GAID=3&GA=93&DocTypeID=HB&LegID=9532&SessionID=3>

Illinois General Assembly. (n.d.-e). *Bill Status of HB5938*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=5938&GAID=9&GA=95&DocTypeID=HB&LegID=37679&SessionID=51>

Illinois General Assembly. (n.d.-f). *Bill Status of SB0650*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=0650&GAID=9&GA=95&DocTypeID=SB&LegID=28507&SessionID=51>

Illinois General Assembly. (n.d.-g). *Bill Status of SB1381*. Retrieved from

<http://www.ilga.gov/legislation/BillStatus.asp?DocTypeID=SB&DocNum=1381&GAID=10&SessionID=76&LegID=42617>

Illinois General Assembly. (n.d.-h). *Bill Status of SB2568*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=2568&GAID=8&GA=94&DocTypeID=SB&LegID=23485&SessionID=50>

Illinois General Assembly. (n.d.-i). *Bill Status of SB2865*. Retrieved from

<http://www.ilga.gov/legislation/billstatus.asp?DocNum=2865&GAID=9&GA=95&DocTypeID=SB&LegID=37610&SessionID=51>

Initiative and Referendum Institute. (2009). *State-by-State List of Initiative and Referendum Provisions*. Retrieved from

http://www.iandr.institute.org/statewide_i%26r.htm

Institute of Medicine. (1999). *Marijuana and medicine: Assessing the science base*. Washington, DC: National Academy Press.

Iskedjian, M. (2007). Meta-analysis of cannabis based treatments for neuropathic and multiple sclerosis-related pain. *Current Medical Research and Opinion*, 23(1), 17-24. doi: 10.1185/030079906X158066

Iversen, L. L. (2000). *The science of marijuana*. New York: Oxford University Press.

- Jadad, A. R., Moore, R. A., Carroll, D., Jenkinson, C., Reynolds, J. M., Gavaghan, D. J., et al. (1996). Assessing the quality of reports of randomized clinical trials: Is blinding necessary? *Controlled Clinical Trials*, 17(1), 1-12.
- Jadrnak, J. (1999, October 9, June 9, 2009). Medical marijuana program may return. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-536939_ITM
- Janofsky, M. (1999, August 22). A Governor who once dabbled in drugs says war on them is misguided. *The New York Times*. Retrieved from <http://www.nytimes.com>
- Jenison, S. (2002, February 7). Medicinal cannabis helps [Opinion Editorial]. *Albuquerque Journal*. Retrieved from <http://www.mapinc.org/drugnews/v02/n234/a01.html?1323>
- John, N. (2010, December 02). Student club supports marijuana reform. *The Maroon*. Retrieved from <http://www.loyolamaroon.com/>
- Johnson, J. R., Burnell-Nugent, M., Lossignol, D., Ganae-Motan, E. D., & Fallon, M. T. (2010). Cannabis-based medicines in the treatment of cancer pain: a randomised, double-blind, parallel group, placebo controlled, comparative study of the efficacy, safety and tolerability of Sativex and Tetranabinex in patients with cancer-related pain. *Journal of Pain and Symptom Management*, 39(2), 167-179.
- Jojola, L. (2001, June 3). Hundreds cheer Gov.'s drug stance. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-759912_ITM
- Joy, J. E., Watson, S. J., & Benson, J. A. (1999). *Marijuana and medicine: Assessing the science base*. Washington, DC: National Academy Press.

- Judge denies author's medical defense to marijuana charge. (1997, November 5, March 3, 2009). *Associated Press*. Retrieved from <http://www.mapinc.org/drugnews>
- Julien, R. M., Advokat, C. D., & Comarty, J. E. (2008). *A primer of drug action: A comprehensive guide to the actions, uses, and side effects of psychoactive drugs* (11th ed.). New York, NY: Worth.
- Just say yes: Legalizing marijuana would benefit many. (2001, June 18). *The Michigan Daily*. Retrieved from <http://www.michigandaily.com/>
- Kadner, P. (2009, July 23). County board's marijuana vote makes him happy [Column]. *The Southtown Star*. Retrieved from <http://www.southtownstar.com/>
- Kaiser, F. M. (2001). *American national government: an overview* (CRS Report for Congress No. RS20443). Retrieved from Congressional Research Service website: www.fas.org/sgp/crs/RS20443.pdf
- Katz, E. (2003). Responses to change by state and local government. *Issues of Democracy*, 8(2), 6-12. Retrieved from <http://books.google.com.au>
- Kaufman, H. (2001). Major players: Bureaucracies in American government. *Public Administration Review*, 61(1), 18-42.
- Kavia, R. B. C., DeRidder, D., Constantinescu, C. S., Storr, C. G., & Fowler, C. J. (2010). Randomized controlled trial of Sativex to treat detrusor overactivity in multiple sclerosis. *Mult Scler*, 16(11), (1349-1359).
- Keene, S. (2006, April 20). Speakers to debate pot legalization. *College Heights Herald*. Retrieved from <http://www.mapinc.org/media/2822>
- Kelly, A. S. (2010, June 24). NORML Louisiana hosts Medical Cannabis Rally. *Monroe News-Star*. Retrieved from <http://www.thenewsstar.com>

- Kentucky governor signs industrial hemp bill. (2001, March 30). *Drug War Chronicle*.
Retrieved from <http://stopthedrugwar.org>
- Killian, C. (2008a, March 22). Debate continues over benefits, risks of medical marijuana. *Kalamazoo Gazette*. Retrieved from
http://www.mlive.com/news/index.ssf/2008/03/debate_continues_over_benefits.html
- Killian, C. (2008b, March 30). Medical pot: Let's make a dope deal. *Kalamazoo Gazette*. Retrieved from <http://www.mlive.com/kzgazette>
- Kincaid, J., & Steytler, N. C. (2009). *Local government and metropolitan regions in federal systems*. Montreal: McGill-Queen's University Press.
- Kingdon, J.W. (1995). *Agendas, Alternatives, and Public Policies*. (2nd edn.). New York: Harper
- Kinstle, B. (2008, November 19). Medical marijuana law hazy, officials warn. *The County Press*. Retrieved from <http://www.mapinc.org/media/4501>
- Kloosterman, S. (2008, October 17). Marijuana proposal on ballot. *Holland Sentinel*.
Retrieved from <http://www.hollandsentinel.com>
- Koch, K. (1999). Medical marijuana: Should doctors be able to prescribe the drug? *The CQ Researcher*, 9, 705-728.
- Korte, T. (2009, February 9). State moves gingerly with medical marijuana law. *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>
- Kousser, T., & McCubbins, M. D. (2005). Social Choice, Crypto-Initiatives and Policy Making by Direct Democracy. *SSRN Working Paper Series, Paper 11*. doi: 10.2139/ssrn.672664

- Kozlowski, K. (2007, May 24). Medical marijuana use initiative launches in Mich. *The Detroit News*. Retrieved from <http://detnews.com>
- Krause, G. A., & Bowman, A. O. (2005). Adverse selection, political parties, and policy delegation in the American Federal System. *The Journal of Law, Economics, & Organization*, 21(2), 359-387. doi:10.1093/jleo/ewi021
- Kreit, A. (2003). The future of medical marijuana: Should the states grow their own? *University of Pennsylvania Law Review*, 151, 1787-1826.
- Ky. Rev. Stat. § 218A.010, et seq. (1992).
- Ky. Rev. Stat. § 260.853. (2001).
- La. Rev. Stat. § 40:966. (1972).
- La. Rev. Stat. § 40:1046. (1991).
- Lakhan, S. E., & Rowland, M. (2009). Whole plant cannabis extracts in the treatment of spasticity in multiple sclerosis: a systematic review. *BMC neurology*, 9(1), 59-59. doi: 10.1186/1471-2377-9-59
- Legendre, R. (2008, July 26). Man vows to fight drug charges. *Daily Comet*. Retrieved from <http://dailycomet.com/>
- Legendre, R. (2009, October 14). California man hopes to change Louisiana's marijuana law. *Houma Today*. Retrieved from <http://www.houmatoday.com>
- Legislature to study medical marijuana. (1999, November 27). *Associated Press*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-535528_ITM
- Lee, N. J., McLeod, D. M., & Shah, D. V. (2008). Framing Policy Debates: Issue Dualism, Journalistic Frames, and Opinions on Controversial Policy Issues. *Communication Research [H.W. Wilson - SSA]*, 35(5), 695.

- Leiden, W. R. (1995). The role of interest-groups in policy formulation. *Washington Law Review*, 70(3), 715-724.
- Lester, K., & Riopell, M. (2010, December 01). Medical marijuana bill dies in state House. *Daily Herald*. Retrieved from <http://www.mapinc.org/drugnews/v10/n992/a10.html?2460>
- Leubsdorf, B. (2008, October 2). Coalition forms to oppose Michigan medical marijuana ballot proposal. *Associated Press*. Retrieved from http://www.mlive.com/news/kalamazoo/index.ssf/2008/10/coalition_forms_to_oppose_mich.html
- Liamputtong, P., & Ezzy, D. (2005). *Qualitative research methods*. South Melbourne, VIC, Australia: Oxford University Press.
- Lichtenberg, K. (2009, Spring). Chronicling past and prospective efforts in Illinois to establish legal protections for medical marijuana users. *Annals of Health Law: Advance Directive*, 165-171.
- Linn, D. (2007, August 22). It's time to legalize and tax marijuana [Published Letter]. *Daily Herald*. Retrieved from <http://www.mapinc.org/media/107>
- Linn, D. (2008a, January 6). Marijuana: Prohibition failing; legalizing could be tax boon [Published Letter]. *Rockford Register Star*. Retrieved from <http://www.mapinc.org/media/370>
- Linn, D. (2008b, May 22). Tax, regulate marijuana [Published Letter]. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- Linn, D. (2008c, June 6). Fact: Marijuana is not a gateway drug [Published Letter]. *Daily Herald*. Retrieved from <http://www.dailyherald.com>

- Linn, D. (2008d, August 1). Tax, regulate marijuana [Published Letter]. *Galesburg Register-Mail*. Retrieved from <http://www.mapinc.org/media/3864>
- Linn, D. (2008e, November 10). Allow medical marijuana [Published Letter]. *Rockford Register Star*. Retrieved from <http://www.mapinc.org/media/370>
- Linn, D. (2008f, November 11). Illinois needs law on medical marijuana [Published Letter]. *Daily Herald*. Retrieved from <http://www.dailyherald.com>
- Linn, D. (2008g, November 20). Medical marijuana [Published Letter]. *Illinois Times*. Retrieved from <http://www.illinoistimes.com>
- Linn, D. (2009a, January 10). Legalize marijuana use [Published Letter]. *Rockford Register Star*. Retrieved from <http://www.mapinc.org/media/370>
- Linn, D. (2009b, February 6). Marijuana law a step in the right direction [Published Letter]. *State Journal-Register*. Retrieved from <http://www.mapinc.org/media/425>
- Linn, D. (2009c, July 23). Cook county marijuana law not enough [Published Letter]. *Chicago Tribune*. Retrieved from <http://www.chicagotribune.com>
- Linthicum, K. (2012, September 25). Feds take marijuana dispensary crackdown to L.A. *Los Angeles Times*. Retrieved from <http://www.latimes.com/>
- Loh-Harrist, E. (2002, November 5). The best medicine? *Gambit Weekly*. Retrieved from <http://www.mapinc.org/media/2406>
- Lyle E. Craker; Denial of Application, 75 Fed. Reg. 2101-2133 (January 14, 2009).
- Lynch, M. E., & Campbell, F. (2011). Cannabinoids for treatment of chronic non-cancer pain; a systematic review of randomized trials. *British journal of clinical pharmacology*, 72(5), 735-744. doi: 10.1111/j.1365-2125.2011.03970.
- Lynn and Erin Compassionate Use Act, N.M. Stat. Ann. Ss 30-31-1 (2007).

Lynn and Erin Compassionate Use Act, S.B. 238, 48th Leg. 1st Sess (N.M. 2007a).

Lynn and Erin Compassionate Use Act, S.B. 523, 48th Leg. 1st Sess. (N.M. 2007b).

Lynn Pierson Compassionate Use Act, S.B. 795, 47th Leg. 1st Sess (N.M. 2005).

Lynn Pierson Compassionate Use Act, S.B. 258, 47th Leg. 2nd Sess. (N.M. 2006).

Müller-Vahl, K. R., Schneider, U., Koblenz, A., Jobges, M., Kolbe, H., Daldrup, T., et al. (2002). Treatment of Tourette's syndrome with 9-tetrahydrocannabinol (THC): a randomized crossover trial. *Pharmacopsychiatry*, 35, 57-61.

Müller-Vahl, K. R., Schneider, U., Prevedel, H., Theloe, K., Kolbe, H., Daldrup, T., et al. (2003). Delta-9-tetrahydrocannabinol (THC) is effective in the treatment of tics in Tourette syndrome: a 6-week randomized trial. *Journal of Clinical Psychiatry*, 64, 459-465.

Machado Rocha, F. C., Dos Santos Júnior, J. G., Stefano, S. C., & Da Silveira, D. X. (2014). Systematic review of the literature on clinical and experimental trials on the antitumor effects of cannabinoids in gliomas. *Journal of Neuro-Oncology*, 116(1), 11-24. doi: 10.1007/s11060-013-1277-1

Machado Rocha, F. C., Stéfano, S. C., De Cássia Haiek, R., Rosa Oliveira, L. M. Q., & Da Silveira, D. X. (2008). Therapeutic use of Cannabis sativa on chemotherapy-induced nausea and vomiting among cancer patients: systematic review and meta-analysis. *European Journal of Cancer Care*, 17(5), 431-443. doi: 10.1111/j.1365-2354.2008.00917.x

Mack, A., & Joy, J. E. (2000). *Marijuana as medicine? The science beyond the controversy*. Washington, DC: National Academy Press.

Macmurdo, M. (2009, April 20). The facts and logical fallacies about marijuana use. *Daily Reveille*. Retrieved from <http://www.mapinc.org/media/2879>

- Magleby, D. B. (1998). Ballot Initiatives and Intergovernmental Relations in the United States. *Publius*, 28(1), 147-163.
- Mahesh, S. U. (2001a, January 5). Ease drug penalties, panel says. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-2604692_ITM
- Mahesh, S. U. (2001b, January 20). Legislators to offer bills on marijuana. *Albuquerque Journal*. Retrieved from www.accessmylibrary.com/coms2/summary_0286-2601353_ITM
- Mahesh, S. U. (2001c, January 31). Draft of pot bill lists specific conditions. *Albuquerque Journal*. Retrieved from <http://cannabisnews.com/news/8/thread8518.shtml>
- Mahesh, S. U. (2001d, March 13). Medical marijuana bill just passes House, *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-2599151_ITM
- Mahesh, S. U. (2002, January 23). Plan for medical marijuana tabled. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-8070_ITM
- Majone, G. (1979). Process and Outcome in Regulatory Decision-Making. *American Behavioral Scientist*, 22(5), 561-583. doi: 10.1177/000276427902200510
- Major Holmes, S. (2010, July 17). Too many patients, not enough pot. *Honolulu Star-Advertiser*. Retrieved from <http://www.mapinc.org/drugnews/v10/n562/a01.html?1165>
- Marijuana- Leave room for relief for patients [Editorial]. (2001, March 16). *Detroit Free Press*. Retrieved from <http://www.freep.com/>

- Marijuana approved for glaucoma victims. (1978, September 10). *Wilmington Morning Star*. Retrieved from <http://news.google.com/newspapers?id=wpoWAAAAIBAJ&sjid=LRMEAAAAIBAJ&pg=3216,1917945&dq=illinois+medical+marijuana+timeline&hl=en>
- Marijuana petition drive for 2006 ballot is under way. (2005, May 6). *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Marijuana petition drive for 2008 ballot is under way in Michigan. (2006, November 27). *South Bend Tribune*. Retrieved from <http://www.southbendtribune.com>
- Marijuana Policy Project. (2008). 2008 Illinois statewide poll results. Retrieved October 15, 2009, from <http://www.mpp.org/states/illinois/2008poll.html>
- Marijuana Policy Project. (2013). *State-by-state medical marijuana laws: How to remove the threat of arrest*. Washington, DC: Marijuana Policy Project.
- Marijuana Policy Project. (2014, September 23). Michigan. Retrieved September 18, 2014, from <http://www.mpp.org/states/michigan/>
- Marshall, P. (2005). Marijuana laws: Should state and federal marijuana laws be reformed? *The CQ Researcher*, 15, 125-148.
- Martin, A., & Rashidian, N. (2014). *A New Leaf: The End of Cannabis Prohibition*. New York: New Press.
- Martin, R. E. (2007, August 2). Stopping the madness. *Review Magazine*. Retrieved from <http://www.mpp.org/states/michigan/news/stopping-the-madness.html>
- Martín-Sánchez, E., Furukawa, T. A., Taylor, J., & Martin, J. L. R. (2009). Systematic review and meta-analysis of cannabis treatment for chronic pain. *Pain medicine (Malden, Mass.)*, 10(8), 1353-1368. doi: 10.1111/j.1526-4637.2009.00703.x

- Mason, M. (2010). Sample size saturation in PhD studies using qualitative interviews. *Forum: Qualitative Social Research*, 11(3), Art. 8. Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/1428/3027>
- Massey, B. (2005, February 7). Medical marijuana proposal back before legislature. *Albuquerque Journal*. Retrieved from <http://cannabisnews.com/news/20/thread20209.shtml>
- Massingale, M. (2005, February 9). Medical marijuana issue heats up. *State Journal-Register*. Retrieved from <http://www.mapinc.org/media/425>
- Mather, L. (2005). Cannabinoid pharmacotherapy: past, present and future. *Minerva Anesthesiologica*, 71, 405-412.
- Matsusaka, J. G. (2005). Direct democracy works. *The Journal of Economic Perspectives*, 19(2), 185-206. doi: 10.1257/0895330054048713
- McBride, D. C., Terry-McElrath, Y., Harwood, H., Inciardi, J. A., & Leukefeld, C. (2009). Reflections on drug policy. *Journal of Drug Issues*, 39(1), 71-88. doi: 10.1177/002204260903900107
- McClannahan, R. (2001, January 18). Godbey 'appalled' by Governor's drug stance. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-2601193_ITM
- McConnell, M. (2005, November 9). Ferndale Oks use of medical marijuana. *The Daily Tribune*. Retrieved from <http://www.mapinc.org/drugnews/v05/n1763/a01.html?1112>
- McCray, V. (2005, November 3). Traverse City voters to weigh in on measure. *Record-Eagle*. Retrieved from <http://ec2-75-101-138-141.compute-1.amazonaws.com/2005/nov/03vote.htm>

- McDonough, J. R. (2000). Marijuana on the ballot. *Policy Review*, 100, 51-61.
- McFarling, U. L. (1999, March 18). Marijuana is boosted as benefit to patients. *Detroit Free Press*. Retrieved from <http://www.mapinc.org/drugnews>
- McHugh, M. L., & Villarruel, A. M. (2003). Descriptive Statistics, Part I: Level of Measurement. *Journal for Specialists in Pediatric Nursing*, 8(1), 35-37. doi: 10.1111/j.1744-6155.2003.tb00182.x
- McKinney, D. (2004, March 2). Statehouse panel to hear medical marijuana plan. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- McLaurine, M. (2008, September 19). Should marijuana be legalized? No [Opinion editorial]. *The Murray State News*. Retrieved from <http://www.thenews.org/>
- McNamara, N. (2009, January 7). Just say no. *City Pulse*. Retrieved from <http://www.mapinc.org/media/4532>
- McPartland, J. M. (2008). The endocannabinoid system: An osteopathic perspective. *J Am Osteopath Assoc*, 108, 586-600.
- McPartland, J. M., & Russo, E. B. (2001). Cannabis and cannabis extracts: Greater than the sum of their parts? *Journal of Cannabis Therapeutics*, 1, 103-132.
- McVicar, B. (2007, November 26). Medical marijuana proposal could appear on Mich. ballot. *The State News*. Retrieved from <http://www.stateneews.com>
- McWilliams Hopes Judge Will Allow Medical Marijuana Defense. (1997, October 28). *PR Newswire*. Retrieved from <http://www.mapinc.org/drugnews>
- Medical Cannabis Act, H.R. 4868, 2003-2004 Legis. Sess. (Ill. 2004a).
- Medical Cannabis Act, S.B. 2440, 2003-2004 Legis. Sess. (Ill. 2004b).
- Medical Cannabis Act, S.B. 2568, 2005-2006 Legis. Sess. (Ill. 2006).

- Medical marijuana a hot issue for group. (2008, October 24). *The Battle Creek Enquirer*. Retrieved from <http://www.battlecreekenquirer.com>
- Medical marijuana bill fails in New Mexico. (2003, March 17). *Alcoholism & Drug Abuse Weekly*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-3401371_ITM
- Medical marijuana comes to the mid west. (2012, February 20). *The State Journal*. Retrieved from http://www.state-journal.com/news/simple_article/5158998
- Medical marijuana: Drug bust sparks questions over law. (2007, August 29). *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>
- Medical pot victory signals appetite for broader reform [Editorial]. (2004, August 5). *The Detroit News*. Retrieved from <http://www.mapinc.org/media/126>
- Medicinal marijuana could lead to decriminalization [Editorial]. (2004, July 26). *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>
- Medicinal pot use legal in Illinois. (1978, September 10). *St. Petersburg Times*. Retrieved from <http://news.google.com/newspapers?id=1xIOAAAIBAJ&sjid=Un0DAAAIBAJ&pg=5388,414209&dq=illinois+medical+marijuana+timeline&hl=en>
- Meehan, M. (2000, June 3). Medical marijuana issue goes to church. *Grand Rapids Press*. Retrieved from <http://www.gr.mlive.com/>
- Mehrotra, K. (2008, March 6). State bill legalizing medical marijuana sent to senate. *The Pantagraph*. Retrieved from <http://www.mapinc.org/media/643>
- Merion, D. (2008, November 20). Now that vote is in, how will medical marijuana program work. *Ann Arbor Business Review*. Retrieved from <http://www.mapinc.org/media/4871>

Michigan Coalition for Compassionate Care. (2008). *Michiganders support medical*

marijuana access. Retrieved February 11, 2009, from

<http://micares.org/blog.html>

Michigan Coalition for Compassionate Care. (2008a, September 23). *Opposition's lying*

ad. Message posted to <http://micares.org/blog.html>.

Michigan Department of State. (2008a). *State Proposal - 08-1: Legislative initiative to*

allow under st. law the medical use of marijuana. Retrieved 20 April, 2009,

from <http://miboecfr.nictusa.com/election/results/08GEN/90000001.html>

Michigan Department of State. (2008b). *Campaign Finance & Elections Reporting*.

Retrieved 15 April, 2009, from <http://miboecfr.nictusa.com/>

Michigan Department of State. (2008c). *Committee Statement of Organization*.

Retrieved 15 April, 2009, from [http://miboecfr.nictusa.com/cgi-](http://miboecfr.nictusa.com/cgi-bin/cfr/com_det.cgi?com_id=514246)

[bin/cfr/com_det.cgi?com_id=514246](http://miboecfr.nictusa.com/cgi-bin/cfr/com_det.cgi?com_id=514246)

Michigan Medical Marihuana Act, Initiated Law 1 of 2008 (2008).

Miles, D. (2007, March 14). Second time around, house oks medical marijuana. *The*

New Mexican. Retrieved from <http://www.freewmexican.com>

Miller, D. (2010, January 15). Illinois is going to pot, legally and quickly [Column]. *The*

Alton Telegraph. Retrieved from

<http://www.mapinc.org/drugnews/v10/n051/a13.html?2223>

Miller, J. (2012, January 15). Former politician: Time to legalize marijuana [Opinion

Editorial]. *Lexington Herald-Leader*. Retrieved from

<http://www.mapinc.org/drugnews/v12/n041/a02.html?1286>

- Miller, N. (2008a, April 13). State's marijuana laws do more harm than the drug [Published letter]. *The News-Enterprise*. Retrieved from <http://www.newsenterpriseonline.com/>
- Miller, N. (2008b, October 17). Response to the 'Legalization of marijuana' [Published letter]. *The Murray State News*. Retrieved from <http://www.thenews.org/>
- Miller, S. (2004, March 3). Lawmakers lobbied to back marijuana plan. *The Pantagraph*. Retrieved from <http://www.mapinc.org/media/643>
- Moore, A., & Stilgoe, J. (2009). Experts and anecdotes: The role of "Anecdotal evidence" in public scientific controversies. *Science Technology Human Values*, 2009(34), 654-677. doi: 10.1177/0162243908329382
- Morelli, C. (2006, January 11). Medical marijuana argument makes little headway in Illinois. *Collinsville Herald*. Retrieved from <http://www.mapinc.org/media/4073>
- Morrison, D. M., Hartway, J., Civic, D., Valadez, D. L., Hoppe, M. J., & Gillmore, M. R. (2000). The Relative Costs and Benefits of Telephone Interviews Versus Self-Administered Diaries for Daily Data Collection. *Evaluation Review*, 24(1), 102-116.
- Morse, T. (2011, May 09). Medical marijuana bill on hold, but will be voted on again. *The Journal Standard*. Retrieved from <http://www.mapinc.org/drugnews/v11/n295/a09.html?2222>
- Musselwhite, K., Cuff, L., McGregor, L., & King, K. M. (2007). The telephone interview is an effective method of data collection in clinical nursing research: a discussion paper. *International Journal of Nursing Studies*, 44(6), 1064-1070. doi: 10.1016/j.ijnurstu.2006.05.01

Musto, D. F. (1999). *The American disease: origins of narcotic control*. New York: Oxford University Press.

Nagel, S. S., & Policy Studies Organization. (1990). *Policy theory and policy evaluation: Concepts, knowledge, causes, and norms*. New York: Greenwood Press.

Nash, K. (2007, March 9). Medical pot bill dies in House. *The Albuquerque Tribune*. Retrieved from <http://www.mapinc.org/media/11>

National Drug Intelligence Center. (July 2002). *Kentucky Drug Threat Assessment*. Retrieved August 10, 2010, from <http://www.justice.gov/ndic/pubs1/1540/marijuan.htm>

National Health and Medical Research Council. (1999). *A guide to the development, implementation and evaluation of clinical practice guidelines*. Canberra: NMHRC.

National Institute on Drug Abuse. (2014a, March). Marijuana. Retrieved September 13, 2014, from <http://www.drugabuse.gov/drugs-abuse/marijuana>

National Institute on Drug Abuse. (2014b, April 8). The NIH Almanac. Retrieved September 13, 2014, from <http://www.nih.gov/about/almanac/organization/NIDA.htm>

National Library of Medicine. (2012). *Nabilone: MedlinePlus drug informaton*. Retrieved September 20, 2012 from <http://www.nlm.nih.gov/medlineplus/druginfo/meds/a607048.html>

National Organization for the Reform of Marijuana Laws. (2010). *State by state laws*. Retrieved December 17, 2010, from http://norml.org/index.cfm?Group_ID=4516

National Organization for the Reform of Marijuana Laws. (2011, June 23). Members of Congress introduce first federal measure since 1937 to legalize the adult use of marijuana- Bipartisan coalition backs the 'Ending Federal Marijuana Prohibition Act of 2011'. Retrieved September 17, 2014, from <http://norml.org/news>

National Organization for the Reform of Marijuana Laws. (2014a). *About NORML*.

Retrieved September 8, 2014, from <http://norml.org/about>

National Organization for the Reform of Marijuana Laws. (2014b). Radio ads: New

Mexico radio spot. Retrieved September 27, 2014, from

<http://norml.org/component/zoo/item/radio-ads#newmexico>

Nave, R. L. (2009, February 26). Medical marijuana. *Illinois Times*. Retrieved from

<http://www.illinoistimes.com>

New Mexico Department of Health. (2007a, June 28). *Patients may apply for medical*

marijuana starting July 1. Retrieved June 30, 2009, from

<http://www.health.state.nm.us/CommunicationsOffice/2007releases.html>

New Mexico Department of Health. (2007b, July 26). *Health Department appoints*

medical marijuana advisory committee. Retrieved July 10, 2009, from

<http://www.health.state.nm.us/CommunicationsOffice/2007releases.html>

New Mexico Department of Health. (2009). *Medical cannabis program*. Retrieved June

7, 2009, from http://www.health.state.nm.us/idb/medical_cannabis.shtml

New Mexico Department of Health. (2011). *Medical cannabis program reports*.

Retrieved December 20, 2011, from http://nmhealth.org/IDB/mcp_reports.shtml.

New Mexico Governor's Drug Policy Advisory Group. (2001). *Report and*

recommendations to the Governor's office. State Capitol: Santa Fe.

- New Mexico medical marijuana bill likely to die without a floor vote barring last-ditch effort [Editorial]. (2006, February 16). *Drug War Chronicle*. Retrieved from <http://stopthedrugwar.org/chronicle/423/nmbill.shtml>
- New Mexico Register. (2008, December 15). *Licencing requirements for producers, production facilities and distribution*. Retrieved July 10, 2009, from <http://www.nmcpr.state.nm.us/nmregister/xix/xix23/7.34.4new.htm>
- New Mexico Secretary of State. (2007). *Campaign Finance Reporting*. Retrieved August 1, 2009, from <http://www.sos.state.nm.us/sos-CandidateInfo.html>
- Nixon, R. (1971, June 17). *Special message to the Congress on Drug Abuse Prevention and Control* [Transcript]. Retrieved September 8, 2014, from <http://www.presidency.ucsb.edu/ws/?pid=3048>
- Noel, H. (2010). Ten Things Political Scientists Know that You Don't. *The Forum*, 8(3), pp. -. Retrieved 11 Sep. 2014, from doi:10.2202/1540-8884.1393
- Notcutt, W., Price, M., Miller, R., Newport, S., Phillips, C., Simmons, S., et al. (2004). Initial experiences with medicinal extracts of cannabis for chronic pain: results from 34 'N of 1' studies. *Anaesthesia*, 59(5), 440-452.
- Nowlin, M. C. (2011). Theories of the policy process: State of the research and emerging trends. *Policy Studies Journal*, 39(1), 41-60. doi:10.1111/j.1541-0072.2010.00389_4.x
- Noyes, R., Brunk, S. F., Avery, D. H., & Canter, A. (1975). The analgesic properties of delta-9-tetrahydrocannabinol and codeine. *Clinical Pharmacology and Therapeutics*, 18, 84-89.

- Nulty, D. (2008). The adequacy of response rates to online and paper surveys: what can be done? *Assessment & Evaluation in Higher Education*, 33(3), 301-314. doi: 10.1080/02602930701293231
- Nurmikko, T. J., Serpell, M. G., Hoggart, B., Toomey, P. J., Morlion, B. J., & Haines, D. (2007). Sativex successfully treats neuropathic pain characterised by allodynia: A randomised, double-blind, placebo-controlled clinical trial. *Pain*, 133, 210-220.
- O'Brien, T. (2002, January 7). Medical marijuana could be relief for pain and finances in Detroit. *Detroit Free Press*. Retrieved from <http://www.freep.com/>
- O'Connor, J. (2010, January 4). Medical marijuana bill gets support from some in GOP. *State Journal-Register*. Retrieved from <http://www.mapinc.org/drugnews/v10/n015/a07.html?2223>
- O'Leary, A. (2004). *The essential guide to doing research*. London, England: SAGE.
- Olsen, D. (2010, May 09). Patients continue push to legalize medical marijuana in Illinois. *State Journal-Register*. Retrieved from <http://www.mapinc.org/drugnews/v10/n350/a03.html?2223>
- Olszewski, J. (2008, October 29). Medical marijuana would be unhealthy and troublesome [Opinion Editorial]. *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Oosting, J. (2008, October 30). Michigan's medical pot law prompts airwaves fight, *MLive*. Retrieved from http://www.mlive.com/politics/index.ssf/2008/10/michigans_medical_pot_law_prom.html

- Ostrow, D. (2007, March 5). Research, not rhetoric: Marijuana can save lives. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- Pacula, R. L., Chriqui, J. F., Reichmann, D. A., & Terry-McElrath, Y. M. (2002). State Medical Marijuana Laws: Understanding the Laws and Their Limitations. *Journal of Public Health Policy*, 23(4), 413-439.
- Panian, D. (2008, November 2). Adrian man campaigns for marijuana proposal. *The Daily Telegram*. Retrieved from <http://www.lenconnect.com>
- Parker, P. (2007, June 28). New Mexico's new pot law becomes effective. *The Albuquerque Tribune*. Retrieved from <http://cannabisnews.com/news/23/thread23133.shtml>
- Patterson, J. (2010, April 17). Harsh political reality may blunt medical marijuana push. *Daily Herald*. Retrieved from <http://www.mapinc.org/drugnews/v10/n301/a04.html?2223>
- Pawloski, J. (2001, March 15). Drug bills opposed by DAs. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-2599331_ITM
- Peachment, A. (2001). Slicing the discipline for global learning processes. *International Review of Administrative Sciences*, 67(4), 611-619.
doi:10.1177/0020852301674001
- Peacock, C. (2007, March 13). Medical marijuana bill back on floor. *Portales News-Tribune*. Retrieved from <http://cannabisnews.com/news/22/thread22741.shtml>
- Pentz, M. A., Mares, D., Schinke, S., & Rohrbach, L. A. (2004). Political science, public policy, and drug use prevention. *Substance use & Misuse*, 39(10-12), 1821-1865. doi:10.1081/LSUM-200033226

- People v. Kratovil, 815 N.E. 2d 78, 90 (Ill. App. 2d 2004).
- People v. Redden, 799 N.W. 2d 184, 189 (Mich. Ct. App. 2010).
- Pickerill, J. M., & Chen, P. (2008). Medical Marijuana Policy and the Virtues of Federalism. *Publius*, 38(1), 22-55. doi: 10.1093/publius/pjm033
- Polly, K. (2005, March 19). Medical marijuana bill dies at session's end. *Carlsbad Current-Argus*. Retrieved from <http://cannabisnews.com/news/20/thread20380.shtml>
- Poole, D. (2009, February 3). City alters prosecution of certain marijuana, drug offenses. *State Journal-Register*. Retrieved from <http://www.mapinc.org/media/425>
- Potter, E. (2007, April 11). Illinois senate votes down medical marijuana bill. *St. Louis Post-Dispatch*. Retrieved from <http://www.mapinc.org/media/418>
- Pro-marijuana group sponsors road cleanup. (2003, March 5). *Associated Press*. Retrieved from <http://cannabisnews.com/news/15/thread15640.shtml>
- ProCon.org. (2014). *23 Legal Medical Marijuana States and DC: Laws, Fees, and Possession Limits*. Retrieved May 15, 2012, from <http://medicalmarijuana.procon.org/view.resource.php?resourceID=000881>
- Public Health Code Act 368 of 1978, M.C.L. ss7401, 7336 (1978).
- QSR International Pty Ltd. (2010). NVivo qualitative data analysis software (Version 9): Author.
- Radosevic II, F. (2008, March 11). Medical marijuana gets support. *Peoria Journal Star*. Retrieved from <http://www.mapinc.org/media/338>
- Raft, D., Gregg, J., Ghia, J., & Harris, L. (1977). Effects of intravenous tetrahydrocannabinol on experimental and surgical pain. *Psychological*

correlates of the analgesic response. *Clinical Pharmacology and Therapeutics*, 21, 26-33.

Range, S. (2005, May 6). Initiative seeks to legalize marijuana. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>

Rawlings, R. J. (2004, September 7). Medical marijuana [Letter to the editor]. *The Zephyr*. Retrieved from <http://www.mapinc.org/media/1566>

Rawlings, R. J. (2005, February 2). Marijuana safer than some government-approved drugs [Letter to the editor]. *Peoria Journal Star*. Retrieved from <http://www.mapinc.org/media/338>

Rector, T. (2005, June 13). 'Reefer madness' in America [Published letter]. *The Courier-Journal*. Retrieved from <http://www.courier-journal.com>

Reed, J. (2009, April 9). Gatewood Galbraith visits Eastern. *The Eastern Progress*. Retrieved from <http://www.easternprogress.com/>

Research and Polling. (2001). *New Mexico drug reform study: Summary of Results*. Retrieved from www.blog.drugpolicyalliance.org/docUploads/NMDR_Summary.pdf.

Restivo, J. (2001, April 4). 30th Hash Bash to fill Diag this weekend. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>

Riley, H. (2008, November 13). NM not alone in lacking marijuana dispensaries. *Daily Lobo*. Retrieved from <http://www.mapinc.org/media/766>

Ritter, A. (2009). How do drug policy makers access research evidence? *International Journal of Drug Policy*, 20, 70-75. doi:10.1016/j.drugpo.2007.11.017

Ritter, A. (2011). The role of research evidence in drug policy development in Australia. *Politicka Misao*, 48(5), 141-156.

- Rivera, S. W., Kozyreva, P. M., & Sarovskii, E. G. (2002). Interviewing Political Elites: Lessons from Russia. *PS: Political Science and Politics*, 35(4), 683-688.
- Robson, P. (2001). Therapeutic aspects of cannabis and cannabinoids. *The British Journal of Psychiatry*, 178, 107-115.
- Rodriguez, C. (2007, November 9). Documentary to educate about medical marijuana. *Southern Illinoisan*. Retrieved from <http://www.mapinc.org/media/1430>
- Rog, D. J., Nurmikko, T. J., Friede, T., & Young, C. A. (2005). Randomized, controlled trial of cannabis-based medicine in central pain in multiple sclerosis. *Neurology*, 65, 812-819.
- Roltsch, C. (2008, September 19). Voters consider allowing marijuana to ease pain. *Capital News Service*. Retrieved from http://blog.mlive.com/cns/2008/09/voters_consider_allowing_marij.html
- Rook, C. (2006, December 29). Experts: Medical marijuana best as pill. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>
- Rott, L. (2004, November 3). A2 voters pass initiative to legalize medical marijuana. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>
- Rubel, W. (2006, January 25). Marijuana bill passes first hurdle. *Farmington Daily Times*. Retrieved from <http://www.daily-times.com>
- Ruchalski, J. (2006, November 14). Cannabis: A token issue no longer. *Daily Reveille*. Retrieved from <http://www.mapinc.org/media/2879>
- Ruiz, P., Strain, E. C., & Langrod, J. G. (2007). *The substance abuse handbook*. Philadelphia, PA: Lippincott Williams & Wilkins.
- Russo, E. B. (2007). History of cannabis and its preparations in saga, science, and sobriquet. *Chemistry & Biodiversity*, 4, 1614-1648.

- Ryan, G. (2007, December 18). What good has the war on drugs really done? [Published letter]. *Bowling Green Daily News*. Retrieved from <http://www.bgdailynews.com/>
- Ryder, D., Walker, N., & Salmon, A. (2006). *Drug use and drug-related harm: A delicate balance*. Melbourne, VIC, Australia: IP Communications.
- S.B. 129, 12th Reg. Sess. (KY 2012).
- S.B. 315, 45th Leg. 1st Sess. (N.M. 2001).
- S.B. 0650, 2007-2008 Legis. Sess. (Ill. 2007).
- Sabatier, P. A. (1988). Belief congruence of governmental and interest group elites with their constituencies. *American Politics Quarterly*, 16(1), 61.
- Sabatier, P. A. (1991). Political science and public policy. *PS: Political Science and Politics*, 24(2), 144-147.
- Sabatier, P. A. (1999). *Theories of the policy process*. Boulder, Colo: Westview Press.
- Sallan, S. E., Cronin, C. M., & Zelen, M. (1980). Antiemetics in patients receiving chemotherapy for cancer: a randomized comparison of delta-9-tetrahydrocannabinol and prochlorperazine. *New England Journal of Medicine*, 302, 135-138.
- Sallan, S. E., Zinberg, N. E., & Frei, E. (1975). Antiemetic effects of delta-9-tetrahydrocannabinol in patients receiving cancer chemotherapy. *New England Journal of Medicine*, 293, 795-797.
- Satyanarayana, M. (2008a, October 25). Is marijuana good medicine? *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Satyanarayana, M. (2008b, November 2). Q & A: Let sick people use marijuana? *Detroit Free Press*. Retrieved from <http://www.freep.com>

- Sax, L. J., Gilmartin, S. K., & Bryant, A. N. (2003). Assessing Response Rates and Nonresponse Bias in Web and Paper Surveys. *Research in Higher Education*, 44(4), 409-432. doi: 10.1023/A:1024232915870
- Schenkel, R. (2010). The challenge of feeding scientific advice into policy-making. *Science (New York, N.Y.)*, 330(6012), 1749-1751. doi:10.1126/science.1197503
- Schuette, B., & Michael, D. (2008a, October 10). California shows why medical marijuana is dangerous [Opinion Editorial]. *Detroit Free Press*. Retrieved from <http://www.freep.com>
- Schuette, B., & Michael, D. (2008b, October 21). Should Michigan legalize medical marijuana? [Opinion Editorial]. *The Detroit News*. Retrieved from <http://detnews.com>
- Selvarajah, D., Gandhi, R., Emery, C. J., & Tesfaye, S. (2010). Randomized placebo-controlled double-blind clinical trial of cannabis-based medicinal product (Sativex) in painful diabetic neuropathy: depression is a major confounding factor. *Diabetes Care*, 33(1), 128-130.
- Senate approves medical marijuana bill, sends it to House. (2009, May 28). *Galesburg Register-Mail*. Retrieved from <http://www.mapinc.org/media/3864>
- Shanahan, E. A., Mcbeth, M. K., Hathaway, P. L., & Arnell, R. J. (2008). Conduit or contributor? The role of media in policy change theory. *Policy Sciences*, 41(2), 115-138. doi: 10.1007/s11077-008-9058-y
- Sharp, A. (2009, July 27). New marijuana law a positive step [Published Letter]. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>
- Sharpe, R. (2001, February 19). Marijuana should be regulated, not banned. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>

Sharpe, R. (2002, November 26). Reefer Sanity [Published letter]. *Gambit Weekly*.

Retrieved from <http://www.mapinc.org/media/2406>

Sharpe, R. (2007, January 3). Failed marijuana policies. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>

Shastry, T. (2007, March 27). Legality of marijuana sparks student debate. *The Louisville Cardinal*. Retrieved from <http://www.louisvillecardinal.com/>

Singh, R. (2003). *American government and politics: a concise introduction*. Retrieved from [http://0-](http://0-site.ebrary.com.library.ecu.edu.au/lib/ecu/docDetail.action?docID=10080894)

[site.ebrary.com.library.ecu.edu.au/lib/ecu/docDetail.action?docID=10080894](http://0-site.ebrary.com.library.ecu.edu.au/lib/ecu/docDetail.action?docID=10080894)

Slider, M. E. (2005, June 13). Supreme Court's ruling on medicinal use of marijuana [Published letter]. *The Courier-Journal*. Retrieved from <http://www.courier-journal.com>

Smith, A. L. (2004, November 19). Medical marijuana goes on trial. *Northwest Herald*. Retrieved from <http://cannabisnews.com>

Smith, B. (2001, October 12). Gov. plans more drug legislation. *Albuquerque Journal*. Retrieved from [http://www.accessmylibrary.com/coms2/summary_0286-](http://www.accessmylibrary.com/coms2/summary_0286-2015174_ITM)
[2015174_ITM](http://www.accessmylibrary.com/coms2/summary_0286-2015174_ITM)

Smith, B. (2002, January 23). Medical marijuana comes with catch-22. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-8072_ITM

Smith, P. (2004, March 5). Fight looms over Detroit medical marijuana measure. *Drug War Chronicle*. Retrieved from <http://www.stopthedrugwar.org/>

Smith, P. (2010, September 6). Kentucky Republican governor candidate supports legal hemp. *Stop the Drug War*. Retrieved from <http://www.stopthedrugwar.org/>

- Smith, T. (1997, September 21). Legalize it, medical pot group urges. *Albuquerque Journal*. Retrieved from http://www.accessmylibrary.com/coms2/summary_0286-307354_ITM
- Speck, D. L. (2010). A hot topic? Climate change mitigation policies, politics, and the media in Australia. *Human Ecology Review*, 17(2), 125-134.
- State finalizes medical marijuana rules. (2009, January 9). *New Mexico Business Weekly*. Retrieved from <http://albuquerque.bizjournals.com/albuquerque/stories/2009/01/05/daily52.html>
- State of Michigan. Department of State. (2008). *Committee Statement of Organization*. Retrieved 20 April, 2009, from http://miboecfr.nictusa.com/cgi-bin/cfr/com_det.cgi?com_id=514246
- State should allow medicinal marijuana use [Editorial]. (2006, December 4). *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>
- State to hold medical marijuana hearing. (2008, December 20). *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>
- States' Rights to Medical Marijuana Act, H.R. 2087, 109th Cong. (2005).
- Steber, K. R. (2013). Stirring the pot: local municipalities' influence on prosecutorial discretion under the Michigan Medical Marihuana Act (MMMA) and an ultimate call for the reform of the MMMA. *The University of Toledo Law Review*, 44(2), 481.
- Stetson, B., & Romeo, R. H. (1996). Using the telephone interview for evaluation of baccalaureate nursing programs. *The Journal of nursing education*, 35(6), 272-274.

- Storey, D. (2007, January 2). Supporters ponder medical marijuana for 2008. *Kentwood Advance*. Retrieved from <http://www.mlive.com/news/advancenewspapers/kentwood>
- Storey, W. (2007). *US Government and politics*. Edinburgh, Scotland: Edinburgh University Press. Retrieved from <http://books.google.com>.
- Strang, J., Witton, J., & Hall, W. (2000). Improving the quality of the cannabis debate: Defining the different domains. *BMJ: British Medical Journal*, 320, 108-110.
- Strasser, F., Luftner, D., Possinger, K., Ernst, G., Ruhstaller, T., Meissner, W., et al. (2006). Comparison of orally administered cannabis extract and delta-9-tetrahydrocannabinol in treating patients with cancer-related anorexia-cachexia syndrome: a multicenter, phase III, randomized, double-blind, placebo-controlled clinical trial from the cannabis-in-cachexia-study-group. *Journal of Clinical Oncology*, 24, 3394-3400.
- Sutton, J. S. (1974). *American government*. London, England: HARRAP.
- Tee, K. (2004, September 22). Medicinal pot use on A2 ballot. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>
- Terrell, S. (2001, February 21). Marijuana bill clears two committees. *The Santa Fe New Mexican*. Retrieved from <http://www.mapinc.org/newscsd/v01/n318/a07.html>
- Terrell, S. (2005a, February 8). Cancer survivor backs bill on medical marijuana. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com>
- Terrell, S. (2005b, March 3). Senate Oks medical-marijuana bills. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com/>

- Terrell, S. (2005c, March 18). Politics stall progress of medical marijuana. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com>
- Terrell, S. (2005d, March 20). Medical marijuana bill fails. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com>
- Terrell, S. (2006a, January 19). Medical marijuana on agenda. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com>
- Terrell, S. (2006b, January 25). Medical-marijuana bill finds support moves forward. *The Santa Fe New Mexican*. Retrieved from <http://www.sfnewmexican.com>
- Terrell, S. (2007a, March 11). Medical marijuana: Governor's wrangling revives measure. *The New Mexican*. Retrieved from <http://www.freenewmexican.com>
- Terrell, S. (2007b, August 31). Medical marijuana: Battle brewing over state pot law. *The New Mexican*. Retrieved from <http://www.santafenewmexican.com>
- Theodore, N. R. (2013, 2013 Fall). We the people: a needed reform of state initiative and referendum procedures. *Missouri Law Review*, 78, 1401+.
- Thomas, B. (2006, April 14). Rally calls for reform of marijuana laws. *Kentucky Kernel*. Retrieved from <http://www.kykernel.com>
- Thomas, K. (2001, March). *Federalism and the Constitution: Limits on congressional power* (CRS Report for Congress No. RL30315). Retrieved from Congressional Research Service website:
<http://www.ait.org.tw/infousa/enus/government/overview/docs/rl30315.pdf>
- Thomas, M. (2009, April 28). Religious leaders back medical marijuana. *Chicago Sun-Times*. Retrieved from <http://www.suntimes.com>

- Thompson, C. (2010, April 08). Medical marijuana is already legal in Illinois. *Chicago Reader*. Retrieved from <http://www.mapinc.org/drugnews/v10/n258/a07.html?2223>
- Tiffin, J. (2006, January 23). Push for medical marijuana raises many questions. *Gallup Independent*. Retrieved from <http://www.gallupindependent.com>
- Tomida, I., Azuara-Blanco, A., House, H., Flint, M., Pertwee, R. G., & Robson, P. J. (2006). Effect of sublingual application of cannabinoids on intraocular pressure: a pilot study. *Journal of Glaucoma*, 15, 349-353.
- Tomkie, K. (2004, May 10). Initiative legalizing medicinal marijuana may be on Nov. ballot. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com/>
- Totten, J. (2008, October 20). Police chief critical of marijuana measure. *Livingston County Daily Press & Argus*. Retrieved from <http://www.livingstondaily.com>
- Trahan, K. (2001, March 23). Pot legalization drive to start at Hash Bash. *The Michigan Daily*. Retrieved from <http://www.michigandaily.com>
- Tramer, M. R., Carroll, D., Campbell, F. A., Reynolds, D. J. M., Moore, R. A., & McQuay, H. J. (2001). Cannabinoids for control of chemotherapy induced nausea and vomiting: quantitative systematic review. *BMJ: British Medical Journal*, 323, 16-21.
- Troutman, E. (2006, November 3). Students meet for marijuana reform. *Kentucky Kernel*. Retrieved from <http://www.kykernel.com>
- Truth and medical marijuana. (2007, February 24). *Chicago Tribune*. Retrieved from <http://www.mapinc.org/media/82>
- U.S. Drug Enforcement Administration. (2007, February 12). In the Matter Lyle E. Craker, Ph.D., Docket No. 05-16, Opinion and Recommended Ruling, Findings

of Fact, Conclusions of Law, and Decision of Administrative Law Judge.

Retrieved from

<http://medicalmarijuana.procon.org/sourcefiles/CrakerOpinion.pdf>.

U.S. Drug Enforcement Administration. (2011, June 21). Denial of Petition to Initiate

Proceedings to Reschedule Marijuana. Retrieved from

<http://medicalmarijuana.procon.org/sourcefiles/DEA-denial-of-petition-2011.pdf>.

U.S. Immigration and Naturalization Service. (1987). *U.S. Government structure, level*

I: A federal immigration & naturalization text. Retrieved from

<http://books.google.com/books>

U.S. Office of the Deputy Attorney General. (2009, October 19). Investigations and

prosecutions in states authorizing the medical use of marijuana [Memorandum].

Retrieved September 13, 2014, from

<http://www.justice.gov/sites/default/files/opa/legacy/2009/10/19/medical-marijuana.pdf>

U.S. Office of the Deputy Attorney General. (2011, June 29). Guidance regarding the

Ogden memo in jurisdictions seeking to authorize marijuana for medical use

[Memorandum]. Retrieved September 13, 2014, from

<http://www.justice.gov/sites/default/files/oip/legacy/2014/07/23/dag-guidance-2011-for-medical-marijuana-use.pdf>

U.S. Office of the Deputy Attorney General. (2013, August 29). Guidance regarding

marijuana enforcement [Memorandum]. Retrieved September 17, 2014, from

<http://www.justice.gov/iso/opa/resources/3052013829132756857467.pdf>

U.S. Department of State, Bureau of International Information Programs. (2007).

Democracy in brief. Retrieved from Bureau of International Information Programs website: <http://www.america.gov/publications/books/democracy-in-brief.html>.

Ungerleider, J. T., Andrysiak, T., Fairbanks, L., Ellison, G. W., & Myers, L. W. (1988).

Delta-9-THC in the treatment of spasticity associated with multiple sclerosis. *Advances in Alcohol & Substance Abuse*, 7(1), 39-50.
doi:10.1300/J251v07n01_04

Ungerleider, J. T., Andrysiak, T., Fairbanks, L., Goodnight, J., Sarna, G., & Jamison, K.

(1982). Cannabis and cancer chemotherapy. A comparison of oral delta-9-THC and prochlorperazine. *Cancer*, 50, 636-645.

United States Courts. (n.d.). *Understanding Federal and State Courts*. Retrieved May 13, 2011, from

<http://www.uscourts.gov/EducationalResources/FederalCourtBasics/CourtStructure/UnderstandingFederalAndStateCourts.aspx>

United States v. Oakland Cannabis Buyers' Cooperative, 532 U.S. 483 (2001).

US Food and Drug Administration. (2006, April 20). *Inter-agency advisory regarding claims that smoked marijuana is a medicine*. Retrieved from

<http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2006/ucm108643.htm>.

Van Dussen, E. L. (2011, May 2). *Cannabis company- 2008 anti Michigan medical marijuana ad* [Video file]. Retrieved from <http://vimeo.com/23150992>

Van Selm, M., & Jankowski, N. W. (2006). Conducting online surveys. *Quality & Quantity*, 40, 435-456. doi: 10.1007/s11135-005-8081-8

- Vaney, C., Heinzl-Gutenbrunner, M., Jobin, P., Tschopp, F., Gattlen, B., Hagen, U., et al. (2004). Efficacy, safety and tolerability of an orally administered cannabis extract in the treatment of spasticity in patients with multiple sclerosis; a randomized, double-blind, placebo-controlled, crossover study. *Multiple Sclerosis*, 10, 417-424.
- Ventura, J. D. (2005, April 28). Movement to decriminalize marijuana facing uphill battle in East Baton Rouge. *The Advocate*. Retrieved from <http://www.theadvocate.com>
- Victory for hemp? The wonder plant that works wonders. (1997, March 20). *San Francisco Bay Guardian*. Retrieved from <http://www.mapinc.org/drugnews/v97/n334/a04.html>
- Volden, C. (2005). Intergovernmental political competition in American Federalism. *American Journal of Political Science*, 49(2), 327-342. Retrieved from <http://www.jstor.org/stable/3647680>
- Vorenberg, S. (2007, September 4). Medical marijuana patients face difficult task of finding drug. *Albuquerque Tribune* Retrieved from <http://www.abqtrib.com>
- Wade, D. T., Makela, P., Robson, P., Houre, H., & Bateman, C. (2004). Do cannabis-based medicinal extracts have general or specific effects on symptoms in multiple sclerosis? A double-blind, randomized, placebocontrolled study on 160 patients. *Multiple Sclerosis*, 10, 434-441.
- Wade, D. T., Robson, P., House, H., Makela, P., & Aram, J. (2003). A preliminary controlled study to determine whether whole-plant cannabis extracts can improve intractable neurogenic symptoms. *Clinical Rehabilitation*, 17, 21-29.

- Wagoner, G. (2008a, October 19). Patients need relief marijuana gives. *Lansing State Journal*. Retrieved from <http://www.lansingstatejournal.com>
- Wagoner, G. (2008b, October 21). Should Michigan legalize medical marijuana? [Opinion Editorial]. *The Detroit News*. Retrieved from <http://detnews.com>
- Wahlberg, D. (2000, January 20). City vote sought on medical marijuana. *The Ann Arbor News*. Retrieved from <http://aa.mlive.com/>
- Wallace, M., Schulteis, G., Atkinson, J. H., Wolfson, T., Lazzaretto, D., Bentley, H., et al. (2007). Dose-dependent effects of smoked cannabis on capsaicin-induced pain and hyperalgesia in healthy volunteers. *Anaesthesiology*, 107(5), 785-796.
- Wang, T., Collet, J.-P., Shapiro, S., & Ware, M. A. (2008). Adverse effects of medical cannabinoids: a systematic review. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, 178(13), 1669-1678. doi: 10.1503/cmaj.071178
- Ware, M. A., Wang, T., Shapiro, S., Robinson, A., Ducruet, T., Huynh, T., et al. (2010). Smoked cannabis for chronic neuropathic pain: a randomized controlled trial. *Canadian Medical Association Journal*, 182(14), 694-701. doi:10.1503/cmaj.091414
- Watts, D. (2010). *Dictionary of American government and politics*. Edinburgh: Edinburgh University Press.
- Weible, C. M., Heikkila, T., deLeon, P., & Sabatier, P. A. (2012). Understanding and influencing the policy process. *Policy Sciences*, 45(1), 1-21. doi:10.1007/s11077-011-9143-5
- Weiss, C.H. (1977). Research for policy's sake: The enlightenment function of social science research. *Policy Analysis*, 3 (4), 531-545.

- Weiss, C. H. (1979). The many meanings of research utilization. *Public Administration Review*, 39(5), 426-431
- Weiss, C. H. (1991). Policy research as advocacy: Pro and con. *Knowledge and Policy*, 4(1-2), 37-55. doi:10.1007/BF02692747
- Weiss, C. H. (1998). *Evaluation: Methods for studying programs and policies*. Upper Saddle River, N.J: Prentice Hall.
- Werner, C. A. (2001). Medical marijuana and the AIDS crisis. *Journal of Cannabis Therapeutics*, 1, 17-33.
- Why not medical marijuana for Kentucky? (2010, January 31). *The State Journal*. Retrieved from <http://www.state-journal.com/>
- Wilczynski, G. (2008, October 30). Officers fight legalized pot. *The Macomb Daily*. Retrieved from <http://www.macombdaily.com>
- Williams, R. F. (2009). *The law of American state constitutions* [Oxford Scholarship Online version]. doi:10.1093/acprof:oso/9780195343083.003.0008
- Willie Nelson runs into drug charges. (2006, September 19). *Los Angeles Times*. Retrieved from <http://www.latimes.com>
- Wills, C., & Schott, K. (2009, March 4). Ill. House committee OKs use of medical marijuana. *Daily Chronicle*. Retrieved from <http://www.daily-chronicle.com>
- Wilsey, B., Marcotte, T., Tsodikov, A., Millman, J., Bentley, H., Gouaux, B., et al. (2008). A randomized, placebo-controlled crossover trial of cannabis cigarettes in neuropathic pain. *Journal of Pain*, 9, 506-521.
- Wilson, T. (2011, April 28). Medical marijuana could become legal in Illinois. *Chicago Tribune*. Retrieved from <http://www.mapinc.org/drugnews/v11/n272/a03.html?2222>

- Wolf, A. (2000). Trends in Public Administration-a Practitioner's View. *International Review of Administrative Sciences*, 66(4), 689-696. doi: 10.1177/0020852300664008
- Working Party on the Use of Cannabis for Medical Purposes. (2000). *Report of the Working Party on the Use of Cannabis for Medical Purposes* [electronic resource]. Retrieved from http://www.druginfo.nsw.gov.au/medicinal_use_of_cannabis/medicinal_cannabis_nsw
- YesOnProp1. (2008, October 21). *Dr. George Wagoner, M.D.* [Video file]. Retrieved from http://www.youtube.com/watch?v=_yGpezygz2g
- Young, E. A. (2007). The Constitution outside the Constitution. *The Yale Law Journal* 117(3), 408-473.
- Zajicek, J., Fox, P., Sanders, H., Wright, D., Vickery, J., Nunn, A., et al. (2003). Cannabinoids for treatment of spasticity and other symptoms related to multiple sclerosis (CAMS study): multicenter randomised placebo-controlled trial. *The Lancet*, 362, 1517-1526.
- Zajicek, J., Sanders, H., Wright, D., Vickery, P., Ingram, W., Reilly, S., et al. (2005). Cannabinoids in multiple sclerosis (CAMS) study: safety and efficacy data for 12 month follow up. *Journal of Neurology, Neurosurgery & Psychiatry*, 76, 1664-1669.
- Zeese, K. B. (1999). History of medical marijuana policy in US. *International Journal of Drug Policy*, 10, 319-328.
- Zeleny, J. (2001, August 7). New Mexico governor runs alone on legalizing marijuana. *Chicago Tribune*. Retrieved from <http://www.chicago.tribune.com>

Zimmerman, J. F. (2012). *State-local governmental interactions*. Albany: State University of New York Press.

Appendix A- Questionnaire for Group One

Factors Influencing Medical Cannabis Policy Development in the United States

Dear participant,

Thank you for agreeing to take part in this study of the processes that led, or did not lead, to the enactment of medicinal cannabis legislation in Michigan, New Mexico, Illinois, Kentucky, and Louisiana.

Please note that you will remain anonymous and no responses will be attributed to any individual.

Through the review of the published media reports relating to medical cannabis, you have been identified as having actively participated in the medical cannabis debate in one of the following states: a) Michigan; b) New Mexico; c) Illinois; d) Kentucky; or e) Louisiana.

Please indicate which state you were MOST ACTIVELY participating in during the 2000-2010 time period (select ONE).

___ Michigan

___ New Mexico

___ Illinois

___ Kentucky

☐ Louisiana

☐ More than one state *

** Because of the nature of these questions, we ask that you specify one state where you had most involvement by selecting it below:*

☐ Michigan

☐ New Mexico

☐ Illinois

☐ Kentucky

☐ Louisiana

As you answer the following questions, could you please answer in relation to the state you specified. Should you wish to make additional comments in relation to other states, please refer to Section 3 “Additional comments”.

This section relates to your opinions on medical cannabis and the medical cannabis debate in your state. For the following statements, please indicate if you strongly agree, agree, disagree, strongly disagree or do not know by circling the letter (a, b, c, d, or e) that best reflects your view.

SECTION 1

1. I support legislation to make cannabis legally available for medicinal purposes
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
2. Cannabis can be used effectively as a medicine
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
3. Cannabis is a gateway to the use of other illicit drugs
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
4. More research is needed on cannabis as a medicine
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
5. Scientific evidence plays an important role in the passing of medical cannabis legislation
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
6. Laws to allow the use of cannabis as a medicine should be implemented in all U.S. States
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know

7. Laws to allow the use of cannabis as a medicine should be implemented at the federal level
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know
8. It is important to separate medical cannabis legalization from the broader drug legalization agenda
 - a) Strongly Agree
 - b) Agree
 - c) Disagree
 - d) Strongly Disagree
 - e) Don't know

For Items 9-17, consider how important each of the following is to whether medical cannabis legislation is enacted or not:

9. Advocacy groups
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
10. The extent to which advocacy groups are well organized
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
11. Politicians
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
12. The amount of money available to both legalization advocates and opponents
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant

- e) Don't know
- 13. Testimonies from people who have used cannabis as a medicine
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
- 14. The support of the executive branch of the state government (i.e., the governor)
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
- 15. The support of the legislative branch of the state government (Senate and the House of Representatives)
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
- 16. Public support
 - a) Very Important
 - b) Somewhat Important
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know
- 17. The media
 - a) Very Important
 - b) Very Unimportant
 - c) Somewhat Unimportant
 - d) Very Unimportant
 - e) Don't know

The following set of questions will enable us to group responses and to sort the data collected. Please note that you will remain anonymous and no responses will be attributed to any individual.

18. In the table below, please rate (by marking the corresponding box) the following in terms of the level of influence you believe they have on medical cannabis legislation (0= no influence, 5= some influence, 10=very high influence).

	No Influence		Very Little Influence			Some Influence			Very High Influence		
	0	1	2	3	4	5	6	7	8	9	10
Advocacy groups											
High-profile individuals											
Money											
Lobbyists											
Opposition groups											
Patient testimonies											
Support in the legislature											
Public support											
Media support											

19. Have you or anyone you know used cannabis for medical purposes or recreational use? (You can give more than one response).
- a) Yes, I have personally used cannabis for medical purposes
 - b) Yes, I know someone who has used cannabis for medical purposes
 - c) No
 - d) Yes, I have used cannabis for recreational purposes
 - e) Yes, I know someone who has used cannabis for recreational purposes
 - f) I opt not to disclose this information
20. Which of the following most accurately describes your political affiliation?
- a) Democrat
 - b) Republican
 - c) Other _____ please specify

You have now completed the first section of the questionnaire.

SECTION 2

The following section will provide you with an opportunity to expand on the answers you provided in the first section of this questionnaire. There is no limit on the length of your answer. If more space is required, simply attach as many pages as you need. Please answer to the best of your ability.

The first part of this section contains general questions relating to the medical cannabis debate and the factors influencing medical cannabis legislation.

- 1) In your opinion, which factors influenced the passing or failure to pass medical cannabis legislation in your state?
- 2) Does scientific evidence play a role in the medical cannabis debate in your state? If so, what role does it play?
- 3) Does the separating of medical cannabis from the broader aim of cannabis legalization have an impact on the medical cannabis debate in your state? If so, what impact does it have?
- 4) Please describe the role politicians played or are playing in the medical cannabis debate in your state.

The second part of this section consists of more specific questions relating to factors influencing the medical cannabis debate in Michigan, New Mexico, Illinois, Kentucky, and Louisiana.

- 5) What effect did or does the involvement of national advocacy organizations, such as the Marijuana Policy Project (MPP) and the National Organization for the Reform of Marijuana Laws (NORML), have on the medical cannabis debate in your state?
- 6) What effect did or does the involvement of the Office of National Drug Control Policy (the “Drug Czar”) have on the medical cannabis debate in your state?
- 7) What are your views on the way money was or is used in your state, in relation to the medical cannabis debate?
- 8) Some U.S. states have a ballot initiative process for proposing a new law or a constitutional amendment at the state level. Other states do not have the initiative process and rely on the legislative branch of government.

What are your views on the effect these differing processes have on the medical cannabis debate in your state?

- 9) What are your views on the role state-based organized lobby groups had on the medical cannabis debate in your state?

- 10) In some U.S. states, city-level changes to medical cannabis legislation preceded changes at the state level.

What are your views on the effect city-level changes have on the state-level medical cannabis legislation?

END OF QUESTIONNAIRE

Thank you for taking your time to participate in this study. We appreciate your responses.

If you would like to leave comments regarding this questionnaire or would like further information, please contact Jelica Grbic (researcher) by telephone (+61 86304 2654 or +381 61 422 345 397) or email (jgrbic@our.ecu.edu.au).

If you would like to obtain further information regarding the results of the study, a summary will be made available to you by the researcher upon request.

SECTION 3

Additional Comments

Appendix B- Additional Questions for Group Two

Dear participant,

Thank you for agreeing to take part in this study of the processes that led, or did not lead, to the enactment of medicinal cannabis legislation in Michigan, New Mexico, Illinois, Kentucky, and Louisiana. You have the option of saving your answer and re-opening the site to complete the questionnaire at a later time (no later than January 14th 2011).

Please note that you will remain anonymous and no responses will be attributed to any individual.

Through the review of publicly available data, you have been identified as a researcher in the alcohol and other drug field, currently receiving a grant from the NIAAA, NIDA, or SAMHSA* in one of the following states: a) Michigan; b) New Mexico; c) Illinois; d) Kentucky; or e) Louisiana.

*** Please disregard this survey if you are not currently or have not in the past conducted research funded by NIAAA, NIDA or SAMHSA.**

Please indicate which state you currently conduct alcohol and other drug related research in (select ONE).

- ☐ Michigan
- ☐ New Mexico
- ☐ Illinois
- ☐ Kentucky
- ☐ Louisiana

Please indicate your awareness of the medical cannabis debate in your state

- ☐ Very aware
- ☐ Somewhat aware
- ☐ Neither aware nor unaware
- ☐ Somewhat unaware
- ☐ Very unaware

Please indicate the level of your involvement in the medical cannabis debate in your state

- ☐ Very involved
- ☐ Somewhat involved
- ☐ Neither involved nor uninvolved
- ☐ Somewhat uninvolved
- ☐ Very uninvolved

Appendix C- Informational Email

Subject name: Factors Influencing Medical Cannabis Policy Development in the United States

Dear (*Potential Research Participant's Name*)

My name is Jelica Grbic, and I am a PhD student in the Faculty of Computing, Health and Science at Edith Cowan University (ECU), Western Australia. I am conducting research under the supervision of Dr. David Ryder (Faculty of Computing Health and Science, ECU) and Professor Perilou Goddard (Department of Psychology, Northern Kentucky University).

You are invited to participate in a research study looking at the policy process underlying medical cannabis laws in the U.S.A, aiming to identify how problems and issues are recognized and raised, and how and why governments choose to act or not act on certain policies. Through a review of the literature, you have been identified as someone who could comment on the policy process, and we are interested in hearing about your experiences.

As a participant in this study, you will be asked to answer questions through an internet survey. The survey can be accessed on the following link

http://ecupsych.qualtrics.com/SE/?SID=SV_0HCbC6H8BbrdRQM .

The questions will ask you about the medical cannabis policy process which lead to laws being passed or not passed.

Participation in this research project is voluntary, and will take approximately 1 hour of your time. You will not be asked to provide any personally-identifying information. There are no anticipated risks or discomforts related to this research, except for the time you take to answer the research questions. You may decline to answer any questions presented during the study if you wish to do so. You will be free to withdraw your consent and cease your involvement in the research project at any time.

Due to the nature of your involvement in the policy creation field, you will be identified in the research project, but not identified by the questionnaire. However, should you wish to do so, you will be able to request anonymity, upon which the researcher will remove all the identifying information relating to you from the project, and your information will be presented using numerical codes. The data with identifying information will be kept for a period of five years following the completion of the research, after which it will be destroyed. The data will be securely locked in an office in Edith Cowan University, to which only the researcher and the supervisors will have access.

The benefits of participation in this study include an opportunity to raise issues relevant to you, and offer your perspective on the medical cannabis policy process. You will also gain insight into what challenges helped shape your experiences and ways in which this occurred. You will also be able to express your wishes for future policy development.

If, after receiving this email, you have any questions about this study or would like additional information to assist you in reaching a decision about participation, please feel free to contact me or either of my supervisors using the information supplied below. If you would like to obtain the final results of this research, you may also contact me on the numbers/email supplied below. If you wish to speak to someone independent of this research, please contact the Postgraduate Coordinator in Public Health (ECU) Kim Clark, whose contact details are supplied below.

This research has been approved by the Human Research and Ethics Committee at Edith Cowan University.

If upon reading the information presented here you wish to participate in this research project, please reply to this email and indicate your consent by writing the following into the e-mail message: "I have read the above information regarding this research study on medical cannabis policy in the U.S, and consent to participate in this study".

Thank you for your interest in this research and for your assistance.

Regards

Jelica Grbic

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Appendix D- Information Letter

Subject name: Factors Influencing Medical Cannabis Policy Development in the United States

Dear

My name is Jelica Grbic, and I am a PhD student in the Faculty of Computing, Health and Science at Edith Cowan University (ECU), Western Australia. I am conducting research under the supervision of Dr. David Ryder (Faculty of Computing Health and Science, ECU) and Professor Perilou Goddard (Department of Psychology, Northern Kentucky University).

You are invited to participate in a research study looking at the policy process underlying medical cannabis laws in the U.S.A, aiming to identify how problems and issues are recognized and raised, and how and why governments choose to act or not act on certain policies. Through a review of the literature, you have been identified as someone who could comment on the policy process, and we are interested in hearing about your experiences.

As a participant in this study, you will be asked to answer questions included in this letter. After completion we ask that you return the questionnaire to us in an envelope provided by **December 10th 2010**. The questions will ask you about the medical cannabis policy process which lead to laws being passed or not passed.

Participation in this research project is voluntary, and will take approximately 1 hour of your time. You will not be asked to provide any personally-identifying information. There are no anticipated risks or discomforts related to this research, except for the time you take to answer the research questions. You may decline to answer any questions presented during the study if you wish to do so. You will be free to withdraw your consent and cease your involvement in the research project at any time.

Due to the nature of your involvement in the policy creation field, you will be identified in the research project, but not identified by the questionnaire. However, should you wish to do so, you will be able to request anonymity, upon which the researcher will remove all the identifying information relating to you from the project, and your information will be presented using numerical codes. The data with identifying information will be kept for a period of five years following the completion of the research, after which it will be destroyed. The data will be securely locked in an office in Edith Cowan University, to which only the researcher and the supervisors will have access.

The benefits of participation in this study include an opportunity to raise issues relevant to you, and offer your perspective on the medical cannabis policy process. You will also gain insight into what challenges helped shape your experiences and ways in which this occurred. You will also be able to express your wishes for future policy development.

If, after receiving this mail, you have any questions about this study or would like additional information to assist you in reaching a decision about participation,

please feel free to contact me or either of my supervisors using the information supplied below. If you would like to obtain the final results of this research, you may also contact me on the numbers/email supplied below. If you wish to speak to someone independent of this research, please contact the Postgraduate Coordinator in Public Health (ECU) Kim Clark, whose contact details are supplied below.

This research has been approved by the Human Research and Ethics Committee at Edith Cowan University.

If upon reading the information presented here you wish to participate in this research project, please indicate your consent by writing the following statement on the tear-off docket below: **“I have read the above information regarding this research study on medical cannabis policy in the U.S, and consent to participate in this study”**.

Thank you for your interest in this research and for your assistance.

Regards

Jelica Grbic



Please write your consent here and return with the questionnaire.

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Appendix E- Group Four Interview Questions

Semi-Structured Interview Schedule

Demographic information

What is your current occupation?

Have you ever conducted research into drug policy?

Prompt: Please tell me a bit more about your research. What did your research mainly focus on?

Have you ever studied policies on the use of cannabis as a medicine?

1) What role do you think scientific evidence generally plays in policy-making?

Prompt: How do you think scientific evidence influences government recognition of a particular issue as requiring consideration and / or action?

Prompt: More specifically, what role do you think scientific evidence plays in policies related to alcohol and other drugs?

Prompt: What role do you think scientific evidence plays in passing medical cannabis policies?

2) How do you think scientific evidence is used by individuals directly or indirectly involved in policy creation (e.g. politicians, lobbyists, and the voting public)?

Prompt: Can you please give specific examples to illustrate the view you have just given?

- 3) It is a belief held by some medical cannabis opponents that insufficient research has been conducted on medical cannabis to warrant a policy change. What is your opinion on this?
- 4) Which factors influence the policy making process? And specifically, drug policy related process?

Prompt: Which factors are important for politicians to take into account when making policy-related decisions?

- 5) What are some of the notable differences between the role scientific evidence plays in general and medical cannabis-related policy making?
- 6) In your opinion, which factors influenced the passing of medical cannabis legislation in 15 US states (such as California, Michigan, and New Mexico) since 1998?
- 7) What role do you think the scientific evidence played in passing medical cannabis laws in 15 US states?
- 8) In your opinion, what role will scientific evidence play in the future in relation to policy making?
- 9) It has been said that scientific evidence does not play a significant enough role in informing alcohol and other drug policies. Do you agree with this statement and if you do, what do you think we can do to improve its significance?

Prompt: Can you suggest how we might give scientific evidence a more significant role in informing policy on the use of cannabis as a medicine?